BLISTER RUST NEWS

January 1928.

Volume XII Number 1

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12, No. 1

E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 1. January, 1928.

NURSERY SANITATION.

Many established commercial firms have gained the confidence of the public to such an extent that articles bearing their trade-marks are accepted with the assurance that the products are of first quality. Retailers of meat in window displays, generally arrange their products in such a way that the U.S. Inspection Stamp is plainly visible. They realize the favorable impression an indication of a good product has on the purchasing public.

This is an age of sanitary practice. Nurserymen take pride in exhibiting their certificates of inspection as proof that their plants are passed upon by qualified inspectors as apparently free from plant diseases and insect pests. Reputable nurserymen realize under present competition they must grow clean, healthy stock. Any practice that tends to assure better trees and plants is advantageous to their industry.

The growing of trees and plants under as nearly disease and insect free conditions as possible is nursery sanitation. In case of nurserymen growing the host plants of blister rust nursery sanitation means;

1. A cultivated black-currant-free zone of at least one mile radius from the plots where other currants and gooseberries or white pines are planted.

2. A Ribes-free zone for a distance of at least 1500 feet from white pines.

3. The growing of only the least susceptible cultivated currant and gooseberry plants, namely, cultivated red and white currants, Alpine currants (Mountain Currants) and cultivated gooseberries.

Such sanitation practices should be adopted by all nurseries growing blister-rust host plants to assure disease-free stock and make feasible a wider interstate movement.

R. A. Sheals, R. I.

FAITH, LOYALTY AND COOPERATION AS COMPONENTS OF SUCCESS

Blister rust work has developed to a point where we are all thinking about how to develop from experimental control to actual application. The spread of the disease in this favorable year has been very large, and the public is looking to us now for ideas and plans on what to do about the control of the disease. The thing that has impressed me in the three months that I have been in the West with you is the "all-pull-together" spirit of accomplishment that marks a real working organization to get the Ribes uprooted wherever the need exists. I feel that the project leaders have put exceptional vision and energy into the development of their projects and I see more effort being made to clarify objectives and tie each project in with other projects and with the work as a whole.

We have been fortunate in that we could concentrate on our primary tasks this year without the necessity of fire fighting which has hindered the development of our projects in the past. We are working to assure adequate protection of five needle pines thro the future years. The difficult bit of work we have ahead of us now is to get the blister rust control established as a branch of forest protection on a scale that will be adequate for the period of the next 20 years, when forestry will have become better established. By that time control work will have followed along much the same road as fire protection, until it is an accepted and more or less standardized practice. It seems to me that our organization has the responsibility for leadership, and can get results if we qualify as real leaders. We shall get successful results or mediocre results, depending on our fitness for leadership. In this connection, I think of the power of words. Words carry idea-pictures with them and ideas are the power that moves the world, so far as civilization and human activities are concerned. There are certain words important in the development of our fighting organization. The first is faith. Applied to this organization, it means earnestness; confidence that we can accomplish what we have been assigned to do. When I say accomplish blister rust control I do not mean that we are actually going to supervise all the pulling of the bushes. Those who own the land must necessarily apply the control. We are to teach them to understand the necessity for control. Leaders must have faith in what they are doing or the incentive to do is lacking.

The second word is loyalty. Loyalty is to me one of the finest words in our language. Loyalty means fighting for your faith; to be willing to sacrifice; to give all that is in you to the cause. It develops breadth of vision and its fruit is joy in accomplishment. We have an organization that has been exceptionally loyal, and this has been the chief source of our success so far. Faith and loyalty to our cause inspires others to have confidence in our leadership.

The third important word to us is cooperation. Loyalty implies cooperation and the two words are inseparable companions. Cooperation means conscious effort to quietly give unselfish and effective help to our associates. It means constructive criticism when necessary. Before you can criticise you must know the facts, and must have thought out the problem and how to solve it. Faith and loyalty make us willing to accept responsibility and do our duty as the need of the time requires. Cooperation and scientific

thinking show us how to do well that which is our duty to do. In this way we get a well-balanced union of heart and head and hand, and give the best that is in us.

So far our work has been experimental, to develop methods and a satisfactory control-plan basis. We have fallen down somewhat in our conception of the meaning of the word "experimental". If experimental work is planned to the best of our ability and available knowledge, we must not think of a negative result as being a mistake. What we should do is to present data that shows a condition as it exists without anything being done to alter it. Then we show that results which we get under a changed condition due to certain action we have taken in which we eliminate as many undetermined factors as possible. We then have three things; the condition as it exists, what was done to change that condition, and the result obtained from such change. Experimental work requires scientific methods of thought, technical knowledge and ability, power to analyze results and imagination to visualize the use of the result.

We must strive harder to be accurate in computing results of our experiments and in our reasoning from these results. There is no excuse for us to be inaccurate. We have capable men and women who have good training and the ability to add, multiply, subtract, and divide. We can develop the ability to think clearly and to clearly express our ideas if we consciously and conscientiously aim to do this. The only way to develop accuracy is to check so often and thoroughly on our computations and deductions that we know the results are correct. If you are loyal to our cause you will be exact in the doing of your work, whatever it may be, so that our work will not fail because it is based on inaccuracies.

Loyalty and honest work have been the chief source of our success so far. We have had as yet no serious set-back in the development of our program. The process of evolution in any worth-while idea or work is certain to bring about a struggle before full development is reached. The critical time is just ahead of us. We must demonstrate that blister rust control is practicable and economically feasible, and that it can be done on a sufficiently large scale to maintain white pine for all future time as a species of primary importance in forest management. I see no difficulty in getting pine stands protected if they have a high merchantable value now or in the near future. It is the young pine that has no present merchantable value that the blister rust is going to take unless we fight for it. It is here that I see the great necessity for clear and careful analysis of the results of control reconnaissance. Without that much young pine is apt to be needlessly sacrificed to the rust before time has changed the cash value of young pine stands from a minus to a plus figure.

S. B. Detwiler

(Excerpt from a talk given at the Spokane Office Personnel Meeting, November 2, 1927.)

A NEW IDEA IN WINDOW DISPLAY

Recently, while collecting material for window displays, I visited a logging job on a cooperator's pine lot to secure some cross sections of the trunks to be used to demonstrate the rapidity of growth. Adjacent to the job was a very fine growth of sapling pine, where I obtained permission to cut several leaders to be used for display purposes. On one of these a single year's growth measured 44 inches. Not a record by any means, as we have all probably seen longer ones, if not having actually measured them. But when some of the neighboring owners saw it labeled

44 Inches - 1 Year's Growth

they seemed very much surprised, and one intimated that it was probably a fake. It seems that few people realize just how fast young pine on good soil will grow. I am therefore planning to locate the best specimen possible showing such growth for three or four years. I will leave all the branches on and display it, so that this particular bunch of doubting Thomases can get a good look at it.

W. E. Bradder - Vt.

Edit:- Well Bradder, I think your idea is a very good one, which might even be extended. Why not also get a cross section of a tree that has been killed by blister rust, cut right through the canker? This will show how the tree has been damaged. A further cross section might be added to your collection, that is, a cross section through a large tree, which has grown in a stand which has been thinned once or twice. Mr. O. M. Pratt of Holderness, N.H. has a number of sections of trees of this kind which prove the value of thinning.

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INFECTION FROM FLOWERING CURRANT

During the eradication season, I examined a 20-acre mixed red and white pine plantation ten years of age in Northwood, N.H. The white pine showed numerous infections and many dead and dying trees were to be seen.

I consulted the owner who was glad to co-operate in the eradication of Ribes on his land. He said, "Go ahead with the work and send me the bill."

We found a large flowering currant bush to be the chief source of the trouble and pulled it with the aid of a Ford car and tow line. Nine other flowering currant bushes were located on the lot. These were smaller than the first, and undoubtedly were the result of seeding by birds. The surrounding area yielded 167 gooseberry bushes most of them being under dense cover and lightly infected.

The total cost of eradication, including one dollar for transportation of the crew, was $8.20. The area worked was 35 acres, making the cost per acre under 24 cents.

L. C. Swain - N. H.

CROSS SECTION OF WHITE PINE SHOWING HOW RING GROWTH HAS BEEN CHECKED BY THE BLISTER RUST.

BLISTER RUST INFECTIONS IN WALDO COUNTY, MAINE

Recently Agent Lambert and myself collected some interesting data on blister rust infection in two lots of approximately one-half acre each, located at Waldo & Belfast, Waldo County, Me.

	Lot at Waldo	Lot at Belfast
No. of trees Examined	107	205
Per cent of trees having stem cankers	34	25
Per cent of trees having limb cankers	9	21
Per cent of trees having infections	43	41
Per cent of healthy trees	57	59
Cankers by Age Classes:		
1917	1	1
1917-1921	2	15
1921 to date	43	79

One point stands out very conclusively and that is blister rust is on the increase in areas where control work is not being carried on.

J. M. White - Maine

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THE CAPTURE
or
THE STORY OF A VILLAINOUS FLOWERING CURRANT

Making my way slowly through a beautiful stand of pine reproduction in the Exeter, N.H. town forest, I came suddenly to a clearing.

What desolation I beheld. The sickly color of dying pines and blanching skeletons of their dead comrades held me riveted to the spot. My eyes narrowed to mere slits as I realized that the "Ribee" culprit who had done these noble trees to death was probably even now lurking near the scene of tragedy.

Ah, a brief but thorough search revealed a diminutive flowering currant bush, which was totally unsuccessful in avoiding my practiced eye. Haughtily I snatched him from his abiding place, and leaned against a sapling gloating over my captive. I marvelled that one of so small a stature could effect such destruction. Thus pondering over this weighty matter, my eyes strayed upward. Curses"???***###". My wandering eyes beheld the dense foliage of another flowering currant directly over my head. How could I ever live down such shame! The world should never hear of this - my blundering search for the guilty pine-killer. I had been actually leaning against a glorified, flowering-currant bush, which having grown in thick cover, had developed into the size of a young tree.

L. C. Swain - N. H.

BLISTER RUST DAMAGE SEVERE AT ROCKLAND, ME.

The following blister rust data were collected on a pine lot in Rockland, Me. during January and March 1925:

The lot is eight or ten acres in size, pasture type, with a wet grassy area running north and south through the middle, with white pine reproduction scattered throughout. There are also a few wild gooseberry bushes among the pines, and many escaped cultivated red currant bushes, a few hundred feet at the north. During the summer these bushes become heavily infected with blister rust and spread it to the neighboring pines. See what these bushes are doing to the pines--then examine your own lot for similar conditions.

Five hundred and thirty trees were closely examined; the data show that 428 trees (or 81%) were infected with blister rust, and that 255 (or 60%) of the 428 infected trees had trunk cankers. This means these trees are killed or will die within a few years. Only 102 (19%) of the 530 trees examined were clean at the end of 1924. The height of the trees ranged from 1 to 27 feet; the average height being 8 feet.

The 530 trees examined constituted about 66% of the number that cover this area; the area examined being also about 66% of the total area. There is no doubt that the high percentage prevails over the entire lot. Neither is there any doubt that many other young pines have been killed and have rotted away, leaving no trace.

The percentage of pine killed will be nearly 100 because 60% of the 81% of the trees infected have stem cankers. The other 21% of the infected trees will have stem cankers within a few years. The oldest infection occurred in 1917. The 19% not having blister rust will surely become infected--there being no escape, unless the cause (currant and gooseberry bushes) is removed.

This is a fair example of what may occur in any pine lot where gooseberry and currant bushes grow.

A. J. Lambert in The Republican Journal
Belfast, Me. 12/29/27.

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ERRATA

On page 318 of the December, 1927 News Letter, there appears an article entitled "A Discussion of Methods of Checking Ribes Eradication", by E. D. Clark, of Conn. Paragraph 3, second sentence of this article reads: "The swamp areas heavily infested with Ribes correspond to the Ribes-free areas which are thrown out by scouting". This sentence should have read, "The swamp areas heavily infested with Ribes correspond to the Cove type. The burned areas with no valuable timber seem to correspond to the Ribes-free areas which are thrown out by scouting." Also on page 319, under check #3, the apparent eradication efficiency is given as 90%; this should be 94%.

"Drat that printer's devil"

DATA ON GROWTH OF WILD BLACK CURRANT (RIBES AMERICANUM)

Location:

Town of Etna, Maine.
In ditch bordering brook along roadside.

Soil type:

Gravelly, parts of the roots were under water. One plant completely under water. Water at this point is not stagnant but swift.

Data:

When the town cut the bushes by the roadside in the fall of 1926 they cut these bushes close to the ground leaving only the crowns.
Examined in month of November, 1926.
Re-examined in the month of October, 1927.
Results:

GROWTH OF CANES OF WILD BLACK CURRANT (RIBES AMERICANUM)

Plant No.	Cane No. 1	Cane No. 2	Cane No. 3	Cane No. 4	Cane No. 5	Cane No. 6	Cane No. 7
	Growth in inches in period between Nov.1926 to Oct. 1927						
1	36	40.75	41	39	37.5	42	41
2	29.5	30.5	28	33	29	23	19.25
3	32.5	28	32	28	24.5		
4	38	42.5	47				
5	44	43	28.5	25			

Average growth of the 26 canes measured . . . . 33.94 in.

Note:- Young growth of pines to eastward of these bushes, but as yet no infection located.

J. W. White - Maine

BLISTER RUST CONTROL IN NEW HAMPSHIRE DURING 1927.

Last March at town meeting and during the following weeks, 77 towns and cities made a total appropriation, for white pine blister rust control, of $28,800. This sum, augmented by balances of such communities as had appropriated the previous year and were continuing control work this season, gave a grand total of town and city funds of about $29,325. Fifty-eight of the 77 towns made funds available for continuing blister rust control already started, or for commencing the work. There were 13 towns who some years ago had completed examination of their pine lands for the first time, but who felt that a second examination was advisable in order to destroy any regrowth of currant and gooseberry bushes which might have taken place in spots most favorable for their development. Besides these two classes of towns there were seven whose work had progressed to such an extent that their appropriations were more than sufficient to complete the remaining areas and so, upon advice of local officers, balances were employed for commencing the second examination of areas worked some years previously.

In addition to cooperation from towns and cities, 30 owners of white pine growth appropriated for initial work and 15 for re-eradication.

Reports of city, town and private work are now being prepared at the office of the State Forestry Department and before long will be mailed to the many cooperating parties. In view of this fact it is felt that a summary of the work as a whole for the past season would be more appropriate than figures in detail.

The total acreage of new lands covered in cooperation with towns, cities and individuals aggregated 151,759 acres. Re-examination of other areas amounted to 74,034 acres, thus giving a total of land worked for the entire season of 225,793 acres. Currant and gooseberry bushes located and destroyed totalled more than 2,666,000.

White pine blister rust control in New Hampshire is carried on in co-operation with towns, cities and individuals, the State giving financial aid to both parties. The expenditure by towns and cities this season amounted to nearly $29,000.00 and by individuals more than $3,700.00. This financial aid extended to towns and individuals made the total expenditure for the past season almost $41,000.00, or an average cost of about 18 cents per acre.

A recent report made by the Federal Office of Blister Rust Control covering control work in the New England States and New York for 1927 brings out some interesting comparisons with similar work carried on in New Hampshire. The total number of towns co-operating in this group of states was 127, New Hampshire communities contributing 78 to this total. Expenditures by towns and cities in the New England states and New York were roughly $38,000 and out of this total New Hampshire communities expended about 76 per cent of the municipal expenditures for this work. The total area upon which currant and gooseberry bushes were destroyed in the New England states and New York was 894,000, while there was covered in New Hampshire slightly more than 25 per cent of this acreage.

While towns and cities in New Hampshire have wisely cooperated in a splendid manner in this work, there still remains about 30 town--a large percentage

of them containing serious infection on pine--who have never made any effort to control this serious menace to pine growth. It is hoped that in the near future most of these towns will be influenced by the action of their nearby sisters and take the necessary steps which will effectually protect their pine growth.-

L. E. Newman.

Extract from New Hampshire Forests.
Dec. 1927.

NOTE ON SUSCEPTIBILITY OF RIBES MISSOURIENSE Nutt.

In past years it has been observed that Ribes missouriense is much more resistant to Cronartium ribicola than other species of Ribes in the Lake States, and close observers interested in blister rust control work have been in doubt as to whether it is at all necessary to eradicate these bushes. Previous to 1926 the writer had found only four leaves showing very small spots of blister rust infection each, which leaves were collected near a group of infected white pine at Deer Park, Wisc., in 1919.

In 1926 one infected R. missouriense with about 20 per cent of its leaves showing the rust, was found in an ecological study-plot at Eau Galle, Wis. This bush, medium in size, was growing in dense shade. and consequently had comparatively thin leaves. On account of sufficient rain, the summer of 1926 was generally favorable for the spread of the blister rust.

The spring of 1926 was generally cold and wet, and cool and wet weather continued well into July. This was especially favorable to Ribes growth as well as to the spread of the blister rust. Work in the ecological study-plots at Eau Galle was started on June 20, and shortly afterwards infected leaves were found in four study plots. The number of infected bushes, and the spread from leaf to leaf on these bushes continued throughout the growing season. In company with Commissioner Duffey and Mr. Chambers, the last of the observations were made on September 16 in two of the ecological study plots where, due to large and small white pine, half shade prevails. At that time nearly all of the R. missouriense bushes observed, approximately fifty, contained infections, and on several of the bushes nearly all of the leaves showed the disease. Although the number of infections on the leaves were not by any means as great as is usual on the more susceptible species, there seems to be no reason to doubt that R. missouriense is sufficiently susceptible in favorable season to be dangerous. Since no infected white pine have as yet been found near these plots, it is evident that in seasons favorable to the spread of the blister rust, when blister rust cankers on pine become numerous, R. missouriense may become heavily infected in half shade.

H. J. Ninman - Wis.

JANUARY ECHOES FROM MAINE

"The Pines" was shown at the following places during the month of December: Belfast 1200 people present, Brooks 150, and Unity 200.

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Snowshoes were used in pine infection scouting in Waldo County. There was nearly two feet of snow in the woods up to December 21.

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The Maine agents held a conference yesterday with State Leader Frost at Lewiston. All agents reported that rodent injury was unusually noticeable this winter. It was generally believed that this chewing of the blister rust cankers by rodents was due to scarcity of food caused by deep snow. Evidently the depth of snow is not a factor in the injury because we have not had much snow yet. Mr. Hodgkins reports that in Massachusetts he also noticed an unusual amount of this type of injury.

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Owing to train schedule out of Belfast, I had to get up at 5:00 A.M. take 6:00 A.M. train, arrive in Waldo at 6:15 and wait at a little two by four station, lighted only by an oil lamp, for daylight to come in order that I might start pine infection scouting.

A. J. Lambert - Maine.

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Recently the film "The Pines was shown in the town of Madison and the manager of the theatre made the following remark, "A very nice picture and very interesting and educational."

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That a major portion of blister rust in west central Maine is of recent origin is borne out by the following observations: "In a lot in Eastern Kennebec County, 10 trees were recently examined, all cankers found dated from 1923 to date. This holds true in Somerset County.

J. M. White - Maine

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"The miner puts his money into mines; the builder puts his money into buildings; the farmer puts his money into farms; and the forester puts his eloquence into forestry."

"The commonwealth is a quadruped; farming, manufacturing, mining, and forestry form the four legs; and trade is the head. Alas! If the forestry leg goes lame the quadruped will limp forever!" G. A. Schenck.

A PRELIMINARY STUDY OF INFECTION CONDITIONS ON THE WEST COAST

During the first week in December Mr. Posey and the writer made a trip to the coast to observe infection conditions there in order to formulate plans for the study of the disease from the control viewpoint. Owing to the large amount of snow and poor transportation facilities at this time of year, it was only possible to go to Cheekye, B. C., Daisy Lake, B.C., and Bremerton, Washington.

At Cheekye and Daisy Lake interest was centered chiefly on infection of large pines. Damage is beginning to be apparent on pines 10 to 20 inches D.B.H., evidenced by dead branches. In many instances cankers were found to have reached the trunk.

An area near Bremerton, Washington supports a fully-stocked stand of white pine approximately 15 years old belonging to the Mountaineers Club of Seattle. Within a half mile is a very heavy infection on white pines and associated Ribes species. The Mountaineers have selected the western white pine as their emblem and are very anxious to protect this pine stand. The immediate problem here is to make a pre-eradication study to determine the feasibility of local control. If a small control project is undertaken here it will be the first attempt in the West, except for the Cheekye experiment, to eradicate Ribes from an infected area. It is believed that it will present an opportunity to study the effectiveness of control.

H. N. Putnam in December Western Blister Rust News

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BLISTER RUST CONTROL IN MAINE SHOWN BY SERIES OF GRAPHS

In order to show blister rust control progress by years I have worked up a graph showing yearly progress for years 1922 to 1927 inclusive. We find such a graph comes in very handy, as the main points of the work are seen at a glance. These graphs show:

1. The amount of town appropriations each year.
2. The number of towns appropriating each year.
3. The number of cooperating pine owners each year.
4. The amount expended by pine owners each year.
5. The acreage protected by all cooperating parties each year.
6. The number of Ribes destroyed each year.
7. The number of acres worked by pine owners and towns each year.
8. The per acre cost to owners and towns each year.

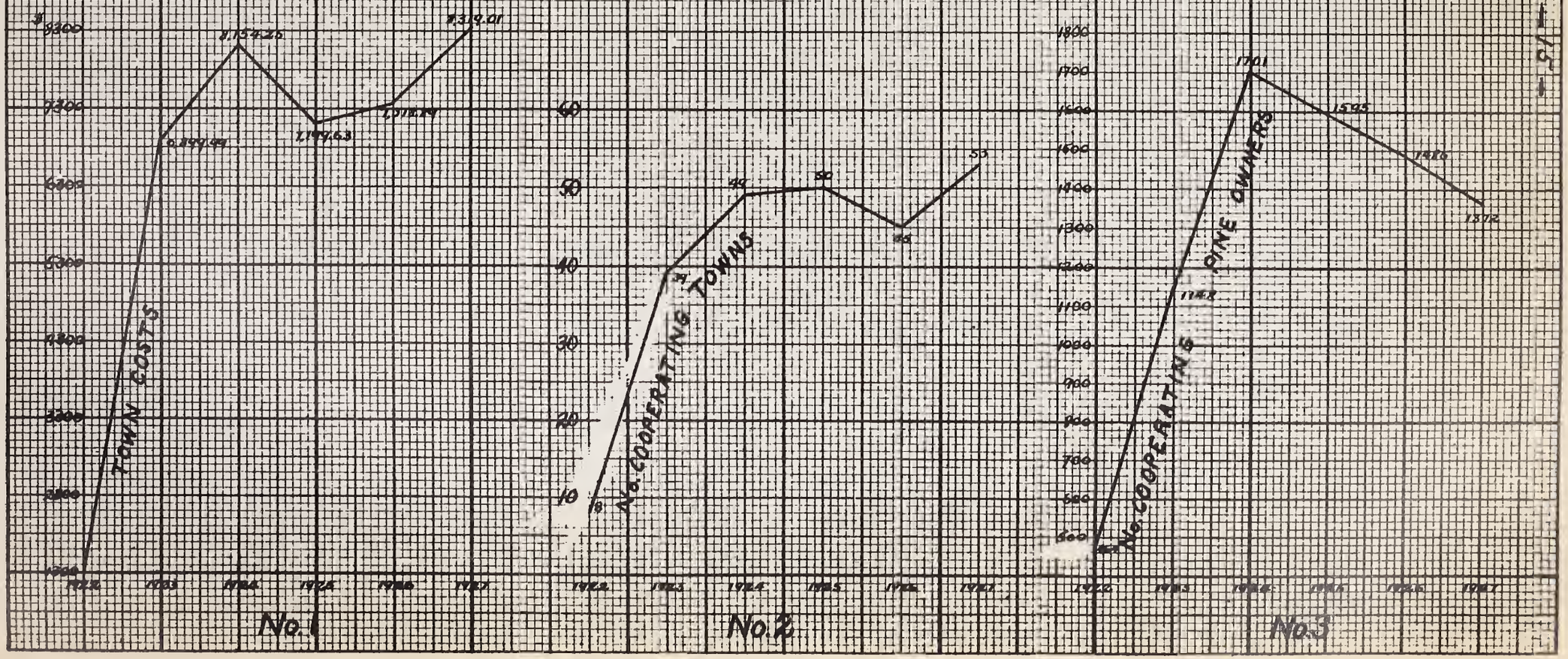
Sufficient space is left on the graphs to allow for other years to follow. Other factors may be added if desired, but these graphs include the chief facts only.

W. O. Frost - Maine

MAINE BLISTER RUST CONTROL
1922--1927

By: W.O. Frost, State Leader

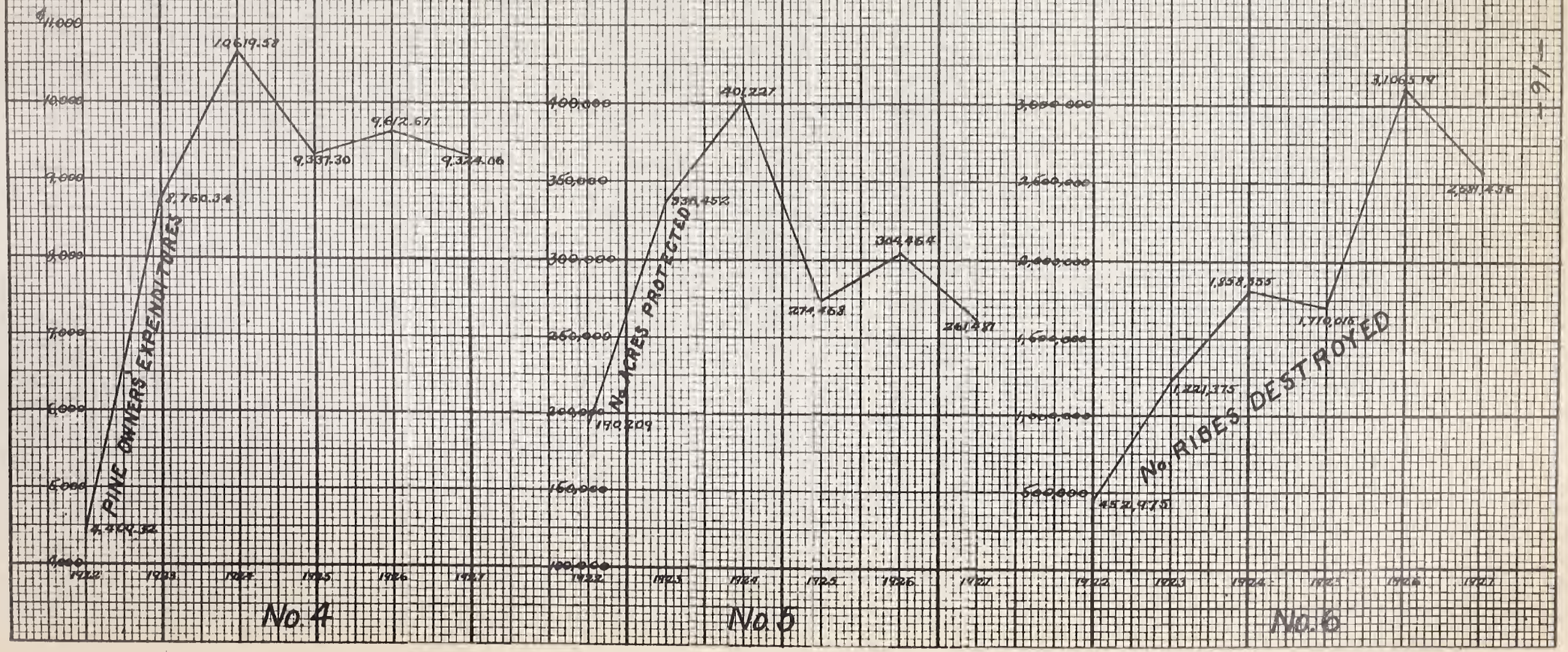
1-10-28 · O.V.W.



MAINE BLISTER RUST CONTROL
1922--1927

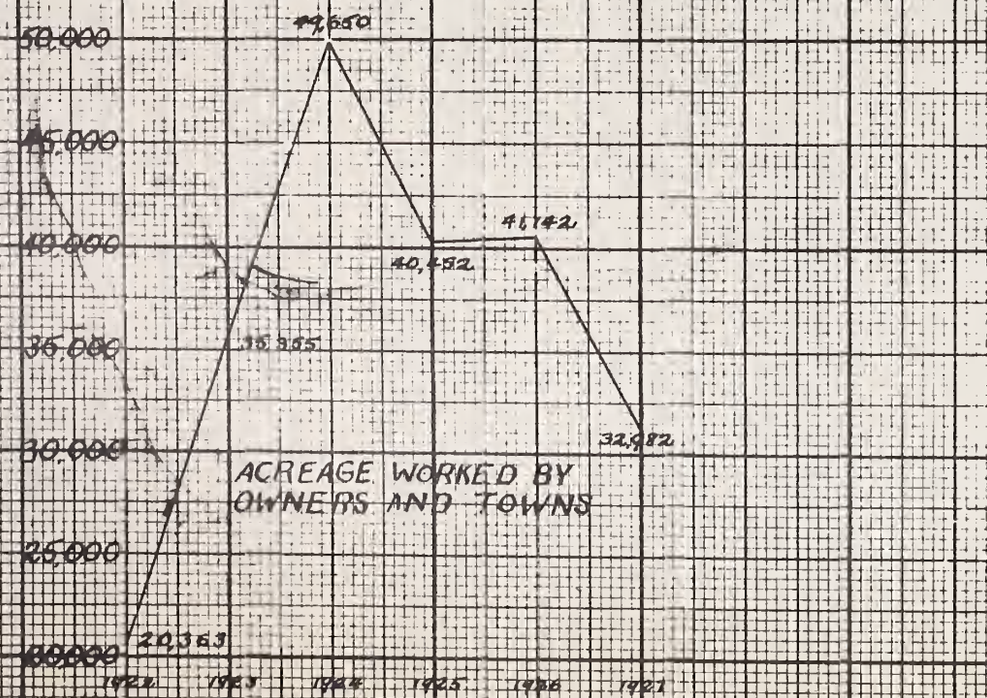
By: W.O. Frost, State Leader

1-10-28 -O.V.W.



MAINE BLISTER RUST CONTROL
1922-1927

By: W.O. Frost, State Leader.
1-14-1928 - O.V.W.



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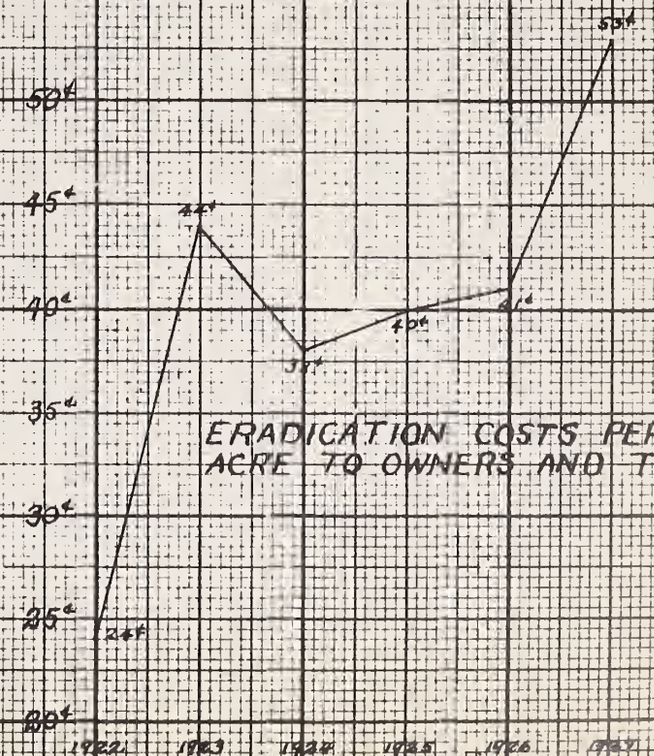

No. 8

HODGKINS COLLECTS CANKER DATA IN MAINE

I have just finished collecting data on blister rust cankers in Brunswick, Freeport, Gorham, Windham, Casco and Bridgton. Many base cankers are now under the snow.

While working in Freeport, I had a rather novel experience. I left my car by the side of the road, where it would be well off the traveled part of the road, and went about my work. When I had spent all the forenoon in collecting canker data I returned to my car, only to find it securely fenced in on all sides. I couldn't understand just why, and as there was no one in sight, started to take the fence down so that I might get out into the road.

A couple of husky woodchoppers just then rushed out of the woods, and the older man asked me what right I had to take the fence down. I then asked him what was his idea. He said that I had no right on the property. I told him I didn't know that I was infringing on anyone's rights; that I was employed by the U. S. Department of Agriculture and working on blister rust control. He said, "Oh", and then wanted to know how it was that I had Massachusetts number plates. I told him that I lived in Massachusetts and consequently had to register my car there. Then he wanted to know why I didn't have "Official Plates", and I had to explain that the car was private property.

All this time the two men who were armed with double-bitted axes seemed to be in a rather threatening attitude with their axes over their shoulders, and one of the men was rather inclined to stand behind me so that I couldn't hardly run away, had I attempted to do so. Although I took in the situation, I didn't let them know that I had suspected anything, and kept talking to them about the blister rust on their property, the conditions in other sections, and how necessary it was to get rid of the currant and gooseberry bushes. Finally the man who seemed to be the leader, and who I later learned was the owner of some of the property where I had been working, lowered his axe. I was a little relieved at this move and took it to be a peace treaty, which it proved to be. After considerably more talk about blister rust, I was allowed to take my car out and as a parting word, the man said that he was glad that he had fenced me in, as he had gotten some worthwhile information. I told him that we were glad to give information at any time that would help the owners of pine, and bid them good day.

My advice to those driving cars in Maine with out-of-state number-plates is - take care as to where you leave your car.

L. W. Hodgkins - Mass.

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The Massachusetts record for post-season Ribes eradication work was broken on December 7, when Agent Brockway and state inspectors removed 75 cultivated Ribes from a location in the town of Norton.

OFFICE COMMENT

Use of Envelopes

In the interest of economy, field employees sending reports or writing letters to more than one member of the Washington office at the same time should use only one envelope. All official mail is opened by messenger and the head clerk has the proper distribution made. The use of the 3-7/8 x 8-7/8 envelopes with the Washington office address printed on is suggested for letter mail as this saves the trouble of addressing. If you do not have any of these addressed envelopes this office will be glad to send you a supply.

Registered Mail

Registered mail for any member of the Washington office should be addressed to the Office of Blister Rust Control rather than any individual in the office. Where registered mail is addressed to the individual it is often delayed at the city post office until delivery is authorized by the addressee. Where addressed to the office delivery is made immediately.

Destroy Old Form 5 Vouchers

The old form 5 voucher, "Public Voucher for Purchases and Services other than Personal" is obsolete and any copies you have on hand should be destroyed. The new standardized form 1034 supersedes the old form 5 and only the new form should be used. Kindly request a supply of these forms if they are needed.

Supplies

The time is drawing near for active field work and you can assist in relieving the usual spring rush in our property room by sending in at once requisitions for spring and summer supplies.

H. P. AVERY

COMPTROLLER'S RULINGS

Beginning with this issue there will appear from time to time extracts of the Comptroller General's rulings on matters which may be of interest to blister rust employees. A full transcript of any of these rulings may be obtained by writing to this office.

(Comptroller's Rul ings Cont'd)

An administrative attempt to place a departmental employee in a field status by nominally transferring him to the Baltimore field unit and ordering him from Baltimore to Washington for instruction purposes prior to his actual transfer to the field is ineffectual to entitle the employee to reimbursement of expenses incurred in traveling to his new duty station.

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A judge of the United States Customs Court traveling on official business when accompanied by his wife, joint use being made of a Pullman section, is entitled to reimbursement of only one-half of the total cost one lower berth if it exceeds one-half of the total amount of the section.

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Where an employee in an authorized travel status is accompanied by his wife and minor children the division of joint traveling expenses so incurred, in order to determine the proportion properly reimbursable to the employee will be made on the following basis: Children under 6 years of age will not be considered in apportioning the expenses; children between the ages of 6 and 12 years will be considered as costing one-half as much as an adult; and children over 12 years of age will be considered on the basis as an adult. Division of joint subsistence expenses will be, as heretofore, on a purely numerical basis.

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Under paragraph 8 (a) of the Standardized Government Travel Regulations, effective October 1, 1926, the use of taxicabs is authorized between hotel or residence and station or wharf without the necessity of showing that a cheaper form of transportation was not available. However, where a traveler checks his baggage at the station and proceeds by taxicab to place of duty, returning to the station by the same means of conveyance, the presumption is that a less expensive form of transportation would have served the purpose, and reimbursement for the expense incurred is not authorized in the absence of a showing that a taxicab was necessary to the accomplishment of the particular travel in question.

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Where it appears that the legal title to the automobile used by an employee of the Department of Agriculture for official travel in Ohio was in the brother of the employee who resided in Washington, but that the employee had the beneficial use of the machine continuously, payment at mileage rates for the official travel actually performed is limited to 7 cents per mile, as fixed by statute and department regulations.

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An employee of the Department of the Agriculture whose regular duty station was Washington, D. C., and who was granted a leave of absence and ordered at

(Comptroller's Rulings Cont'd.)

the termination thereof to proceed to a temporary station for duty, was not required to return to his permanent station in order to acquire a travel status but upon reporting for duty at the temporary duty station, as ordered by competent authority, may be considered in a travel status and reimbursed the amount of authorized expenses incurred subsequent to his arrival.

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The fact that an appointee for temporary duty in the Children's Bureau, Department of Labor, took the oath of office before leaving her place of residence, at which place she performed no duty, does not place her in a travel status or entitle her to reimbursement of expenses incurred in thereafter reporting to her designated headquarters or first duty station.

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An employee of the Department of Commerce ordered to return to Washington, D. C., from Peru via San Francisco and other Pacific coast cities for performance of official duty, but who, while en route, received word of the illness of a relative and abandoned the official routing, returning to Washington without the performance of further official duty, must be considered as in a leave of absence status and not entitled to reimbursement for any of the expenses of the travel or subsistence, from the time he departed from the official route.

1/17/28

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RUST LOSSES LESS IN THE WHEAT-GROWING STATES

Because stem rust of wheat still persists in the 13 north-central states where the barberry-eradication campaign has been going on for 10 years, many persons have concluded the work against this disease is useless. The U. S. Department of Agriculture reports, however, that steady progress has been made and that persistence of the rust means that there are still large numbers of the bushes to be destroyed. The department men say that losses of wheat from this pest now, as a rule, amount to only about 16,000,000 bushels a year in the 13 states, whereas 10 years ago the usual annual loss from this cause was about 50,000,000 bushels. More than 14,300,000 barberry bushes were destroyed in the first nine years of the campaign, up to 1926. In 1926 more than 2,800,000 bushes were eradicated, more than in any of the preceding years, a good indication that many bushes remain to infest the wheatfields.

P. M. Farmer in
Better Crops with Plant Food, Dec. 1927.

Edit: Workers in Blister Rust Control may often wonder about the success of the barberry eradication work, and it is for that reason that the above article appears in the Blister Rust News.

FOREST TREE SEED SUPPLY STATIONS

The first of a series of forest tree seed supply stations to be established on the State Forests of Pennsylvania will be established on the Mount Alto State Forest in Franklin County. These seed supply stations are special forest areas set aside for the production of high quality forest tree seeds.

During the last 25 years more than 100,000,000 trees have been used for reforestation in Pennsylvania. To produce this large number of trees a large quantity of forest tree seeds is required. With each forward step in the big reforestation program the need of more attention to the source and quality of seed supply is an imperative need. To insure good stands of trees it is important that high quality planting stock be used, and to have available high-quality planting stock it is necessary to give special attention to the quality of seed sown in forest tree nurseries. As long as a chance is taken on the quality of the seed supply used in our nurseries we are running big chances of growing crops of inferior forest trees. It is not good business to take a chance on the quality of the seed supply from which will be grown a crop that takes from 50 to 70 and even 100 years to mature. It is difficult to correct errors in a crop program that requires as many as 100 years to mature.

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The main features of Pennsylvania's seed supply station program can be understood by outlining the plan used in selecting "Forest Tree Seed Supply Station No. 1." The seed supply station will be established in a plantation of 15,000 Scotch pine trees that were planted in 1909. An examination of the plantation a few years after planting showed an excellent establishment of planted trees. About a year ago Dr. O.-A. Schenck, a forester of international fame, after making a survey of the plantation, remarked that this was "one of the finest plantations of Scotch pine of its age ever seen in my extensive forest travels in many parts of the world."

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Because this forest stand is made up chiefly of superior quality trees it was decided that it should be developed primarily for the production of high quality seed to be used in reforestation work of the State. We have gone far enough in forestry in Pennsylvania to introduce quality methods. In the past quantity production has been stressed and too little attention given to quality production.

Recent investigations in Europe prove clearly that characteristics of the mother trees due to soil and climate may be transmitted through the seeds of the offspring. About a year ago, I had the privilege of visiting with Professor Ernst Munch, one of the foremost forest tree seed authorities in the world. When journeying with him through his nurseries and experimental plots near the historic forest school of Tharandt in Saxony, Germany, he said: "There are growing in Germany today about 750,000 acres of Scotch pine trees grown from seeds of inferior or doubtful quality." These inferior stands show the results of forest practices that were in use before the scientific facts that we now have were available for use. We may excuse those who erred 50 or 100 years ago. Then the principle of heredity in forest tree seeds was not known. But today no good forester has a right to make the same mistake."

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Among the seed supply stations that will be established this year are a Scotch Pine Station in Franklin County, a White Pine Station at Greenwood Furnace in Huntingdon County, etc. Each selected tree will be designated as a "seed tree". Each seed tree will be given a label and serial number. From the records of these seed stations and individual seed trees, it will be possible from year to year to collect quality tree seeds. When seed-collecting time approaches, the seed collectors will know where to go for their seed. When they come to one of these specially designated trees they will know that it is an approved tree, and that seed may be collected from it for nursery stock production.

This new plan of establishing forest tree seed supply stations is a big forward step. It will guarantee the production of high quality trees and make possible the promotion of a sound reforestation program that will stand well among the best in the world. The growing of trees from high quality seed and approved ancestry is a sound forest practice. It deserves wide use and intensive application.

Joseph S. Illick, Pa. State Forester -
Forest Leaves. Oct., 1927.

Edit:-The above article has been reproduced for the benefit of the blister rust employees, who asked at the Boston Conference that new ideas in forestry be presented to them in the B. R. News.

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SUGAR PINE AND ITS DISTRIBUTION

By John Hemphill, Madera Sugar Pine Co. Madera, Calif.

Cont'd. from December Issue

PRODUCTION

While it is true that reports indicate that the California mills are at present producing to normal capacity in order that they may give such lumber as they do cut full advantage of summer drying weather, expressed intention indicates that not less than 30% less lumber will be produced this year than last.

A survey of the last 90 days' production shows that 153,000,000 less was produced than for the same period last season. On the other hand, 20,000,000 feet more lumber was sold and 25,000,000 feet more shipped. This would seem to simplify the problem of marketing California lumber to the extent of 178,000,000 feet, and should do much to reduce such evils as attend overproduction.

DISTRIBUTION

From time to time efforts have been made to establish mill-to-consumer plans of merchandising western lumber. These have been successful only in part because it is the custom of the trade to buy through established eastern wholesale lumber dealers. Producers find it very much to their advantage to avail themselves of these channels of lumber distribution.

More of a disposition on the part of the distributor to cooperate with and loyally serve the producer, and less of an inclination on the part of the manufacturer to recognize other than reputable, high-grade representatives, thoroughly understanding the problems of distribution and in every way qualified to sell, will make for a much better condition in the industry generally. To put it plainly, over-production has tempted many of the manufacturers to offer their stock to incompetent and irresponsible Toms, Dicks, and Harrys. Small factories and retailers have been bothered to death with innumerable sales calls by individuals of this type. The wrong impression concerning surplus stocks has been created; the buyer has become somewhat confused; and the market has been constantly upset by the offering of lumber at any price which will allow salesmen of this type any profit whatever.

Consumers and retailers desire constant, personal contact with representatives of reliable firms who understand their problems. They wish relief from the necessity of correspondence at long range concerning technical matters about which they have not time to post themselves fully. They wish someone to represent them in the adjustment of differences. Appreciating all this, the right sort of a wholesaler becomes a student of the lumber market. He is at all times prepared to give the buyer any information he may desire regarding production, available sources of supply, prices, or advice as to when and what to buy. Financial assistance is also sometimes rendered. It is, moreover, never any part of his plan to solicit patronage of the buyer's customers. The bond such business relations establish is still further strengthened by the fact that the distributors are, within certain limits, "home folks" to the consumer. The eastern business man is by nature conservative and disposed to deal only with firms of which he has confidence, born of long and thorough acquaintance.

The Sugar Pine producers have learned by experience that they do well to ally themselves with concerns of the kind described, in order that they may enjoy the benefits of the wholesalers' knowledge of the trade and its requirements, and derive such advantage as accrues to them by reason of the principles of honesty, responsibility, and fair dealing held constantly before them by the officers' of the National-American Wholesale Lumber Association.

The California Lumber Merchant
July 1, 1927.

STATE FORESTRY LEGISLATION SHOWS GRATIFYING PROGRESS, SAYS CHIEF FORESTER

That the past year has shown an increasing interest in forestry throughout the country is evidenced by the legislation enacted in a number of States, according to Col. William B. Greeley, chief of the Forest Service, U.S. Dept. of Agriculture.

"It is evident," says the Chief Forester, in reviewing the progress in State forestry legislation, "that the States are becoming more and more alive to the importance of forestry and the necessity of progressively developing their forestry policies."

California created a department of natural resources, under the general supervision of a director, with a division of forestry administered by the State forester and guided as to policies by a State board of forestry. This new department takes over all the powers and duties of the former State forester.

Rhode Island made an important change in its forestry organization by putting it under the Department of Agriculture, North Carolina revised the board of conservation and development by increasing its membership and Louisiana provided for an additional member on its forestry board.

In Ohio, legislation was enacted authorizing the board of control of the Ohio Agricultural Experiment Station to acquire representative tracts suited for research and demonstration in practical forestry. Maine provided for the establishment and management of town forests, and Wisconsin made similar provisions for county forests. Washington authorized the State to accept from counties tax lands suitable for State forests, Michigan provided for the retention of such lands by the State, and Minnesota set aside all State lands within the boundaries of the Minnesota National Forest as State forests. Pennsylvania made an appropriation of $450,000 toward the acquisition of about 7,200 acres of private land in order to preserve a portion of the original forests of the State and for other forests and parks, subject to the contribution of not less than $200,000 of private funds for the same purpose. Maryland authorized the formation of auxiliary State forests through agreement with private landowners.

Some of the most outstanding legislative measures adopted during the year were aimed at encouraging the growing of timber. California, Louisiana, Minnesota and Wisconsin amended their constitutions to permit changes in the taxation of forest lands, and Louisiana and Minnesota passed laws putting such amendments into operation. In addition, Minnesota created a commission of inquiry looking to a further development of the State's forest policy for the promotion of private timber growing, and directed the commission of conservation to make recommendation regarding all State-owned lands that are suitable for reforestation purposes.

Dec. 5, 1927.

TIMBER GROWING AND LOGGING PRACTICE IN THE WESTERN WHITE PINE AND LARCH-FIR REGIONS.

At the present rapid rate of logging in northern Idaho and western Montana it is anticipated that most of the privately-owned timber will be cut in a little more than thirty years and that the lumber production from the region will by that time be greatly curtailed. Whether the resultant setback to the lumber industry will be only temporary depends upon the treatment given the remaining timber stands and the vast areas already cut or burned over, says the United States Forest Service.

"Timber Growing and Logging Practice in the Western White Pine and Larch-Fir Forests of the Northern Rocky Mountains," just published by the Department of Agriculture as a result of several years of study, sets forth the measures necessary to keep these forest lands productive and, where possible, to produce full timber crops. The authors are Elers Koch and R. N. Cunningham, of the Forest Service. The bulletin is numbered 1494-D.

In the western white pine and larch-fir regions, according to these authors, adequate protection from fire is the all-important measure for keeping most of the forest area producing timber. To get such protection requires not only active effort to prevent and suppress the frequently recurring forest fires, but also proper disposal of the debris, or slash, left after logging.

As an important forestry measure this bulletin advocates the holding and protecting of the forest species of low value which are left when white pine is logged for the reason that it does not pay to take them out except under very favorable logging conditions.

In the case of young stands of western white pine the promise is even better. Since these white pine stands 80 to 100 years old often have a stumpage value of $200 to $300 an acre, it is obvious that holding and protecting well-established young stands is well worth while. Second growth white pine has proved an unexpected bonanza on many New England farm woodlots, and the authors of this bulletin see no reason why second growth white pine in Idaho should not turn out to be similarly profitable.

PENNSYLVANIA VIRGIN WHITE PINE AND HEMLOCK AREA OFFERED TO THE GOVERNMENT

One of the few remaining stands of virgin white pine and hemlock timber in the eastern States is the Hearts Content Forest, in Warren County, Pa. This timber is being cut. Wishing to see a part of the stand preserved in its wilderness beauty, the owner, the Wheeler & Dusenberry Lumber Co., has offered to give 20 acres of it to the Government. The gift area represents some of the best mixtures of pine and hemlock that dominated the virgin forests of Pennsylvania and for two centuries upheld the appropriateness of the term "Penn's Woods." It lies within the boundaries of the Allegheny National Forest and will be made a part of that forest. As nearly as possible it will be kept intact from outside influences, enabling foresters to study the cyclic changes that take place naturally in a virgin stand of white pine and hemlock.

Forest Worker, November, 1927.

PERSONALS

Mr. S. B. Detwiler attended the Annual Meeting of the Association for the Advancement of Science at Memphis, Tenn., on December 27, 1927.

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WEDDING BELLS

Al and Alma of the Washington Office have been married. Perhaps this does not mean as much to the field force as it does to us, so it is herewith announced that Miss Alma Bishop and Mr. A. E. Fivaz were married on Sunday January 1, 1928, at Bluefield, W. Va.

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Mr. J. D. Kennedy, Asst. State Leader, Conservation Commission, Albany, N.Y., whose appointment as Agent has been terminated, was appointed collaborator January 16. Mr. Kennedy will work temporarily for the New York State Extension Service, taking over Mr. Cope's duties. Mr. Cope will be engaged on other work for a few months.

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Mr. J. H. Miles, Agent at Putnam, Conn., resigned Dec. 31, 1927.

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Mr. G. Stanley Doore's headquarters have been changed from Greenfield, Mass., to Boston for the winter months.

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Mr. Fred E. Frost, in Charge of the File Room, Wash. office has been transferred to take charge of the Bureau files. Mrs. Lena Blake of the Bureau file room will take Mr. Frost's place.

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Miss Mary J. Francis, stenographer Washington office, was transferred to Office of Chief of Bureau, January 1, 1928.

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Mr. Milton R. Edwards, Agent, Corvallis, Ore., resigned December 23.

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Agent W. J. Cullen, Rochester, N.H., dropped into the Washington Office Dec. 30.

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Miss Beatrice L. McCormick, clerk at Spokane Office, was transferred to Washington January 1, 1928.

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Messrs. L. P. Gould, Thurston Corbett, and John Griffiths, who were engaged in investigative work under Mr. A. E. Fivaz at Warrensburg, Chestertown and N. Hudson, N.Y. last summer, dropped into the Washington office during the Christmas vacation.

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Miss Ethel Mellen has been appointed typist at Spokane Office January 4.

OBITUARIES

It is with regret that the Office has learned of the deaths of Agent J. M. Corliss' father on December 14, of State Leader J. E. Riley, Jr.'s mother on December 15, and of Mr. S. B. Detwiler's mother on January 1. Our sympathy is extended to them in their bereavement.

BLISTER RUST NEWS

February 1928.

Volume XII

Number 2

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 2 February, 1928.

SEVERE INFECTION ON WHITE PINE IN LISBON, N. H.

Survey Brings Out Startling Facts

A survey carried on by S. H. Boomer, County Blister Rust Agent, and T. L. Kane, agent in Grafton county, on the Moulton Lot in Lisbon, N.H., shows a large area of white pine with from 17 per cent to 57 per cent of the trees infected with the white pine blister rust.

Plots were staked out in pine of different ages from young growth to mature stands. The trees in each plot were examined carefully with the following results:

A. Trees in this area contained about 35,000 feet per acre and showed 23 per cent to be infected.

B. Area of pine containing about 10,000 feet per acre showed 57 per cent infected.

C. Forty acres of young pines, 20 feet tall, showed 42 per cent infected.

The first area contained about 60,000 board feet of infected pines, of which practically all were attacked about 45 feet above the ground. Many of the cankers had caused the tops to break off. The infection was all caused by wild gooseberry bushes.

The value of the infected pine would have been $360 had it been protected and the cost of destroying the gooseberry bushes would have been but a few dollars.

H. B. Moulton, president of the Parker-Young Company is very much interested in blister rust control and adds $100 to the town appropriation each year. Areas which had been protected show no new infection.

Infection in Carroll County is just as widespread but is younger than that at Lisbon and too much emphasis cannot be placed upon the fact that wild and cultivated currant and gooseberry bushes should be destroyed in the vicinity of white pine.

No. Conway (N.H.) Reporter 1/19/28.

1927 PROGRESS IN BLISTER RUST CONTROL IN BERKSHIRE COUNTY, MASS.

The progress made in the control of white pine blister rust in Berkshire County during 1927 was very encouraging. The work was carried on in twelve towns in southern Berkshire and 173,000 wild currant and gooseberry bushes, which spread the rust, were destroyed on 66,000 acres of land. The cost of this work was $4,350.00 or an average of $.066 per acre. Almost 19,000 acres of this area was in pine which is conservatively valued at $475,000.00. On this basis, six cents an acre is cheap insurance. The state paid nearly half the cost, $2,165.00 and the owners paid, $2,185.00.

The following table gives a better idea of the progress made not only during the past season but also since 1925 when the control work was first started under the present plan. It will be noted that there has been a steady annual increase in acreage covered and pine protected with a corresponding decrease in cost per acre:

	1925	1926	1927	Totals
Land area examined (acres),	6518	38,884	66,031	116,238
Pine area protected (acres),	1002	8,967	18,973	31,577
Wild currants and gooseberries destroyed	57656	166,926	173,007	549,315
Cost to State,	$382.00	$2,005.00	$2,165.00	$4,552.00
Cost to pine owners	444.00	1,699.00	2,185,00	4,328.00
Total Cost of work,	826.00	3,704.00	4,350.00	8,880.00
Cost per acre,	.126	.095	.066	.076

Infection has been found on pine in every town in the county except Adams which has no pine of which to boast. As a rule the disease on pine is found only on scattered trees but there are a few pine lots that are being seriously menaced by the rust. Currant and gooseberry bushes are found heavily diseased everywhere and unless they are speedily destroyed it will be only a short time before many more pine lots will show signs of ruin from the rust.

During 1928 the control program will be continued in the unworked portions of southern Berkshire County and also extended into the northeast quarter of the county from Hinsdale to North Adams. Every owner of white pine is urged to take advantage of the assistance which the state offers them to protect their pine holdings.

W. J. Endersbee - Agent,
The Berkshire Farmers' Bulletin. January 1928.

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At East Bridgewater, Mass., in the early seventies, a young man planted a tract of slightly less than 12 acres of pine trees. In 1921, after about 50 years, the lumber was sold on the stump for $10.25 per cord, yielding 589 cords, thus producing a little more than $500 per acre.

The American Nurseryman. Jan. 1, 1928.

NOTES ON SHEEP AND RIBES IN CONNECTICUT

Late in the summer of 1926 Mr. Seymour Cunningham decided to have eradication work stopped on his Goshen sheep farm as he was buying more sheep and stated that they would dispose of the Ribes. He had some especially big specimens of wild black currants, R. americanum Mill., in a swamp something less than a fourth of a mile below the sheep barn. In 1927, I met Mr. Cunningham and asked him about the sheep. He stated that they were doing well. When asked about their effect on the currants in the swamp, he answered that he would not consider letting them go into the swamp, because they would probably get foot rot, a disease which he considered worse than the blister rust.

* * * *

Later inquiries from Mr. Wm. Oliver of West Cornwall, formerly from the sheep raising section of England, eleicited the information that over there the sheep raisers consider that their best meadows are none too good for the wool-bearers. They let the sheep in the "downs" for never more than two weeks at a time, for the land is damp (not wet and swampy), but moist enough so that if the sheep are left longer their hoofs would grow unduly and there would be danger of foot rot.

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My recollection is that although there were a great many Ribes on the Curtis estate generally, that in the sheep pasture, even in places especially adapted to gooseberry bushes, they are wanting. This was in 1926. In 1927, Mr. Curtis disposed of all his sheep and has none at Bantam, Conn.

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It is my impression from the way the Cunningham sheep cleaned up Goshen hardhack (Potentilla) that on well drained ground they would, if not given too much range, so reduce the foliage capacity of most bushes to an extent that the blister rust would have little room for spread. In the swamp areas where the bushes occur by the thousands and where the eradication expense rises so high, it is not safe to graze sheep, unless they are provided with rubber boots.

E. D. Clark - Conn.

Edit:-Mr. C. G. Potts, Associate Animal Husbandman in Sheep and Goat Investigations of the Department of Agriculture, has kindly commented on the above note of Mr. Clark's, as follows: "While the disease mentioned above could no doubt be expected to occur when sheep are kept entirely on swamp lands and it is a well known fact that they do better when kept on high, dry pastures, it should not be authoritatively stated that sheep cannot be successfully pastured on lands in which swamps occur, as this is regularly done in some sections without any occurrence of foot rot."

IS YOUR PINE WORTH 30 CENTS?

* * * *

Based on the valuation of Orford for 1927, and the funds voted for town affairs the additional appropriation of $400. for Blister Rust Control, would merely increase the tax rate about five (5) cents per $100.

* * * *

Is this not a small price to pay for the protection of a tree generally admitted to be the most valuable in New Hampshire?

White Pine, (if properly handled) should continue to produce its share of farm revenue. But it must be, like any other crop, protected; and pine needs protection from fire, unwise cutting and from Blister Rust.

Blister Rust is a fatal bark disease of our native pine. It spreads from infected to healthy pines only through the aid of currant or gooseberry bushes.

General examination has shown that Blister Rust is widespread throughout the pine areas of Orford.

In the past Orford voted funds for destroying currant and gooseberry bushes. More than 364,000 of these plants were destroyed on 12,637 acres. The cost to the town has averaged but 18 cents per acre.

Since 1918, there have been 184 towns and cities, and more than 500 owners of pine growth, who have carried on this work, in cooperation with the State Forestry Department. As a result, nearly 26,000,000 bushes have been destroyed on more than 1,950,000 acres. Nearly 50 towns have completed the examination of their pine areas.

New Hampshire is not alone in this work, for 16 other pine States, from Maine to California, are engaged in the destruction of these bushes so fatal to pine growth.

It is not possible to locate and destroy every currant or gooseberry bush; but, examinations by expert checkers have indicated that town crews destroy better than 95% of these plants, when working under State supervision. Such work gives proper protection to the white pines.

The land area of Orford is estimated at 30,234 acres. As 12,637 acres have been covered, there remains 17,597. However, it is not advisable to destroy these bushes over all the remaining acres, for on about one-half (8,500 acres) there is not enough pine to warrant such an expenditure.

It is important that the unworked pine areas, should be protected. Funds provided at the next Town Meeting, together with State aid, will allow this necessary work to be continued.

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United States Department of Agriculture. N. H. State Forestry Department
Cooperating

E V E N T U A L L Y THE PINE OWNER MUST KNOW HIS NATIVE RIBES

W H Y N O T N O W

A STORY:

Old Si Jones came ambling down the street, till he saw a sign "Farm Bureau Office". He entered the office - -

"Whar's that Blister Rust Agent", he roared. A six foot two, weighing 180 or better, jumped from his desk with a mild "Hello, Mr. Jones, what can I do for you?"

"What I want to know, young man, is how many of them bushes are there that are pestering the life out of my pine."

"Only about 30 to 40 to the acre; it wouldn't take long with a crew to get rid of 'em all." said the Agent.

"That's not what I mean. I want to know how many kinds of the pesky bushes there are and what they look like. I've figgered it out this way. If I learn them bushes now, I'll know 'em the next time I see 'em. If I let you put a crew on my land and do all the work, I won't ever know the bushes or where they'll grow. Now will I?"

The Agent paused a moment before replying, reflecting upon the difficulty he had been having in getting pine owners out to see the crew work, even on their own land.

"I'll tell you Mr. Jones what I'd do if I were you. I'd work with the crew when they work your own lot. There you'll learn how the work is done and the Ribes - I mean the currants and gooseberries look like."

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Several days were required to pull up the currant and gooseberry bushes. At the close of the last day of eradication work, Old Si walked slowly back from the woods to his house. Meeting his wife on the door step, he said, "Wall, I never, those young fellers don't look like they know beans, but they certainly do know Ribs - no, Ribes they called 'em. They tired me out, too, but I don't care. I learned them bushes. That's what I set out to do." "Les see, Mirandy, there were prickly berry and smooth berry goose-bushes. (Don't them boys have fun nicknaming the plants). Then for currants I found wild red ones with leaves like a red maple, and skunk currants because they smell, and wild black ones with tart berries and some red currants which used to be tame, and then there was a muley sort of a bush, a prickly currant with lots of prickles - gosh, my hands are full of 'em yet."

Wandering through the woods several days later, Si smiled to himself as he thought now that the currants and gooseberries were removed, the blister rust wouldn't get his pines. Then recalling that the Agent had said severe damage was caused sometimes by escaped bushes, he decided to look about a little for missed currants and gooseberries. At the end of an hour's search he had found five small bushes. He grinned, "Just wait 'till I see that agent, I'll show him these bushes."

The Blister Rust Agent dropped in at the Jones' place the following Saturday after checking up the work of his crew, and was met at the door by Old Si who held up 5 little bushes about 6 inches long.

"Lookee here what I got - three skunks and two goosebushes. Found 'em in the south pasture next that young pine grove. I told you it'd pay me to know those bushes."

R. G. Pierce.

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BLISTER RUST IN OREGON

The spread of the white pine blister rust has become a definite threat to the shite and sugar pine stands of Oregon. It was first found in Oregon in Clatsop and Tillamook counties in 1925, and during the past season has been found in Hood River and Multnomah counties with additional areas of diseased currant bushes in Columbia county. While the disease at present is confined to only a small area in Oregon, it will undoubtedly spread from year to year.

The disease was first discovered in the Northwest in 1921 on cultivated black currants near Vancouver, B. C. Since then the disease has spread towards the south and east until it covers the western and northern portions of Washington, a small part of northwestern Idaho and northwestern Oregon.

The white pine blister rust is a disease that attacks all of the five-leaved pines. It spends part of its life cycle on the pines and the remainder on various species of currants and gooseberries. It needs both hosts and if either one is eliminated the disease disappears.

Complete eradication of the disease is impossible but there are certain control measures that it is practicable to undertake that will keep the disease in check. These control measures have taken three forms.

The first is quarantine on the shipment of currant and gooseberry plants as well as the five-needle pines between the infected areas and other parts of the United States. Quarantine has been established within the state of Oregon by both state officials and the federal government.

The second method of control, which aims to retard the spread of the disease, is the destruction of the cultivated black currant within or near the white pine stands. The state of Oregon has designated the black currant as a dangerous host plant and the destruction of the plant within the state has been completed.

The third method consists of local control measures on areas where the disease has been established. Control is secured by the destruction of all currant bushes within the area to be protected and from 900 to 1,500 feet beyond the edges.

Report of the Oregon State Forester for Year
ending December 31, 1927.

NEWS! NEWS! LET US HAVE NEWS.

We need news from the field agents and state leaders. We need it regularly. At times it seems that nothing has happened in your state or district during the entire month, for we get nary an article, not even a hint.

This paucity of news from the field is made up by culling from various publications; these are a poor substitute at best for original material from our men. (R.G.P.)

We know there is plenty of news. Anyone in the field must have several experiences each month that would make interesting news articles of benefit to other employees. Either we are unable to recognize such experiences as news of if we do, we fail to report them to the editors where they would do some good. We can make the "NEWS" a live wire of real help to the blister rust family, or a dead and useless educational instrument. The trend seems to be towards death from lack of interest and cooperation of our personnel.

In a group of 70 odd persons there ought to be enough "live ones" to make the "NEWS" a successful and active feature of our work. Each one should take it upon himself, as one of the duties connected with his job, to supply real simon-pure blister rust ideas and news. Certain kinds of articles can not be used for various reasons, but observations on Ribes occurrence, growth, habitat, seeding, flowering, eradication, sprouting, crew methods, scouting results; pine damage, cankers, growth, value, reproduction, reforestation; amount of rust, date of first appearance of different stages, abundance of each; experiences with pine owners, and numerous other things make interesting and valued news items.

It's time for us to change that "Let George do it" attitude to one of "I'll do it" and throw in some initiative and punch for the good of the work as a whole. Just because our activities are restricted to a small area, is no reason for hobbling our brains. We are not separate, isolated entities but part of a large working family to which we owe certain obligations. To grow, we must let our minds reach out and grasp our problems from the point of view of their effect upon the whole family. One way to help the family is for each individual to take it upon himself to make the "NEWS" a vital, helpful service to all. There are acres of room for improvement. If you're blessed with ideas and news, let's have them; if you haven't any - get some!

J. F. Martin.

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PURCHASES NEAR END OF FISCAL YEAR

The cooperation of the field men is requested in restricting purchases of supplies and materials near the close of the fiscal year.

After May 15 all requests for large purchases will require evidence of urgent necessity before they will be approved by the Bureau. We must be in a position to defend beyond question any large items that it may be found necessary to purchase near the end of the fiscal year as required immediately for the work in progress.

Purchases of supplies and materials should be avoided as much as possible during the latter part of June, especially where delivery can not be made before the close of the fiscal year. The rule of the General Accounting Office is that the date of delivery ordinarily governs the appropriation to be charged in purchases of supplies and materials not under contract.

REVISED MISCELLANEOUS CIRCULAR NO. 40 OUT ABOUT APRIL 1.

Page proof of the revised eastern and western editions of Miscellaneous Circular No. 40 has been received and returned to the Government Printing Office. It now appears that this publication should be available for distribution about April 1, so use up your present supply of the old edition.

J. F. Martin.

BLISTER RUST TALK APPEALS TO THE YOUNGER GENERATION AT LACROSSE, WISC.

During a meeting which I attended last week at LaCrosse, I spoke at some length on the subject of white pine blister rust and distributed a large number of Miscellaneous Circular No. 40. I was pleased to note how much interest there was on this subject among the younger members in attendance. I have arranged with the county agent there to use some of this material as subjects for debate and believe it will go a long ways toward building up cooperation in this and other counties in that vicinity where we shall have need for such cooperation in the future.

E. L. Chambers
State Entomologist Wisconsin.

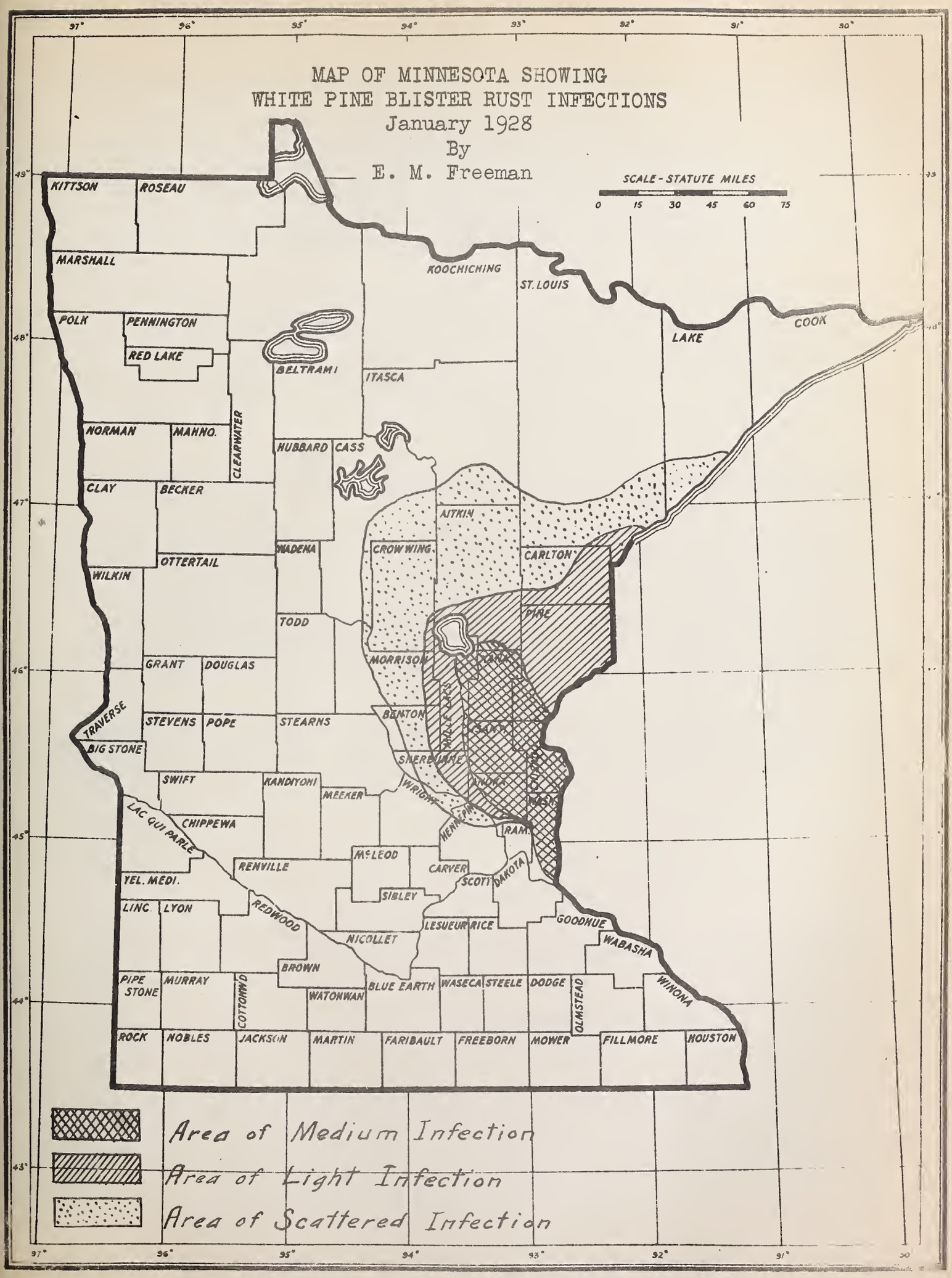
WHITE PINE BLISTER RUST CONTROL ON THE AIR.

As part of the U. S. Radio Farm School program, a short talk on the Control of the White Pine Blister Rust was given over the radio on January 30, throughout the entire country, except those states on the Gulf Coast.

The purpose of this talk, which was given in dialogue form, was to give the public some information concerning the nature of the blister rust, where it came from, its spread in the United States, its danger to our white pine crop, and the practical methods of controlling it. Special attention was called to the part played by the European black currant (Ribes nigrum L.) in the spread of the rust. Emphasis was placed upon the fact that this species of currant spreads the disease over great distances - in some cases as far as 100 miles or more.

Concerning the value of white pine to the people of the United States, a quotation from this talk may be timely: "The white and sugar pines are our most useful and valuable softwood timber trees. White pine was practically the only lumber used in the United States up to 50 years ago, and we still have enough white pine timber left standing to be worth 1½ times the total cost of the Panama Canal. * * No other forest tree is so profitable for planting or growing systematically for a timber crop."

L.E.H.


MAP OF MINNESOTA SHOWING
WHITE PINE BLISTER RUST INFECTIONS
January 1928
By
E. M. Freeman
SCALE - STATUTE MILES
0 15 30 45 60 75
KITTSON
ROSEAU
MARSHALL
POLK
PENNINGTON
RED LAKE
NORMAN
MAHNO.
CLEARWATER
CLAY
BECKER
WILKIN
OTTERTAIL
BELTRAMI
ITASCA
KOOCHICHING
ST. LOUIS
LAKE
COOK
HUBBARD
CASS
WADENA
AITKIN
CROW WING
CARLTON
PINE
TODD
MORRISON
GRANT
DOUGLAS
TRAVERSE
STEVENS
POPE
STEARNS
BENTON
BIG STONE
SWIFT
KANDIYOHI
MEEKER
WRIGHT
HENNEPIN
RAM.
CHIPPEWA
LAC QUI PARLE
McLEOD
RENVILLE
CARVER
SCOTT
DAKOTA
YEL. MEDI.
SIBLEY
LINC.
LYON
REDWOOD
LESUEUR
RICE
GOODHUE
NICOLLET
WABASHA
BROWN
PIPE STONE
MURRAY
COTTONWD
WATONWAN
BLUE EARTH
WASECA
STEELE
DODGE
OLMSTEAD
WINONA
ROCK
NOBLES
JACKSON
MARTIN
FARIBAULT
FREEBORN
MOWER
FILLMORE
HOUSTON
Area of Medium Infection
Area of Light Infection
Area of Scattered Infection

BLISTER RUST TALK GIVEN BEFORE FORESTRY ORGANIZATIONS BY AGENT STOUFFER

I had the pleasure of talking before the State Association of Supervisors this morning. They are having their Annual Meeting here in the Lansing City Hall this week. There were approximately 200 present. I gave them the story of the rust, including life cycle, hosts, manner and time of spread, means of control, etc. Then I told of the introduction of the disease into this country and its history here in Michigan up till the present, with an idea of what we expect shortly.

Last week I gave a similar talk before the Second Annual Meeting of the Association of Municipal, Commercial, and Public Utilities Foresters. Their meeting was held on February 3, in the Forestry Building at the Michigan State College. It was really the get-together of foresters of the State during the yearly event of Farmers' Week at the College.

Feb. 9, 1928. D. J. Stouffer - Michigan.

WASHINGTON OFFICE NEEDS PHOTOGRAPHS OF TREE SURGERY ON INFECTED PINES

Photographs showing proper removal by saw, pruning knife, or ax of branches infected with blister rust are desired for use in making lantern slides. Since pine owners are interested in saving their forest trees, especially their young plantations, from the blister rust the photographs for the most part should be of young trees. I believe that lantern slides showing how trees only slightly infected can be saved by a small amount of tree surgery work, should be available to all agents having access to a stereopticon.

Any negatives or prints forwarded to the Washington Office should have the following data attached; place where taken, owner, date, size of tree; and if a number of trees were pruned for blister rust, the number of branches removed and the time the tree surgery work consumed, should be stated.

Prints or negatives will be returned to the sender, if so desired.

R. G. Pierce.

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Snow for use in motion pictures has been successfully made from pine shavings.

The Berkshire (Mass.) Eagle.

SMALL TOWN HAS DIFFICULTY IN RAISING BLISTER RUST ERADICATION FUNDS

A distressing situation is shown in the following letter:

"Mr. George F. Richardson, Jr.,

Dorchester, N.H.
January 8, 1928.

Dear Sir:-

Received your note with one from Mr. Burnham Saturday P. M. He said no one in No. Dorchester was interested as it would mean higher tax rate, a thing this whole town is united on to prevent if possible.

I have questioned the few who live around the town house and south and while some believe it is a good work, still they can not spare the time to either have the meeting at their house or attend somewhere else.

Dorchester has only 28 families, with no industries, taxes coming from farms and timber lots, the latter are being cut off at an alarming rate and would go still faster with a higher tax rate. The $400.00 that has been put in the town warrant in the past for blister rust control would raise our tax rate from 14 to 18 cents per $100. valuation. We know for a sure that the town has lost over $10,000. this winter on stumpage alone and nothing to take its place.

What is to become of these small towns I do not know, but the more we keep down expenses the longer we hope to keep them on the farm instead of leaving for the cities.

Very sorry not to be able to arrange a meeting as I have had the pleasure of hearing you speak and also am interested in the subject but do not believe that small towns can tackle the job. Some few including myself are doing private work on our own land but there are some who would not want the bushes pulled up even if done free.

Sincerely,

P.D.S. "

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The above is An Example of the Vicious Circle.

1. No money for blister rust control--
2. Severe loss from blister rust will occur-
3. Timber-lot stripping continues--
4. Lower valuation in the town, and less money for taxes--
5. Higher tax rate for actual valuation-
6. Less chance of securing blister rust protection.

Suggestion - The vicious circle must be broken, but how? The town's pine should be protected, for the best interests of the town and the state. Probably some agent has solved a similar problem. Let us know in the next News Letter how it was done.

R.G.P.

PINE-TREE SQUIRRELS AND THE BLISTER RUST - A STORY IN THREE PARTS

Part I

Some of the consequences of the large squirrel crop of last year are just now becoming apparent. On Great Hill on the land of D. O. Perkins and George Corban, the squirrels seem to have become so hungry that they are girdling and eating yound white pine trees which are from ten to fifteen feet tall.

This should be a good time to see the outcome between the State Forestry and the Fish and Game Commission. Which will give way to the other for the protection of their pet charge?

We are reminded of the time that our dog was heard to "bark up" over on the land of a neighbor. Thinking that it was our cousin's predacious old cat that was treed, we went pronto with the trusty old muzzle-loading shot gun. Our cousin met us at our destination, bearing an armful of stones secured for the benefit of our dog. His cat was some forty feet up in the old chestnut tree and the dog to do his best was able to get less than one tenth way up. Owing to our simultaneous approach, it became a perfect case of armed neutrality. After passing the time of day, our cousin dropped the stones and went his way, while we departed back the other way with dog and gun, leaving Old Grimalkin triumphant in the tree top.

We have had chestnut blight, pine tree rust and now what will be the outcome of the squirrel attack?

Reuben Chippany,
Cornwall, January 30, 1928.

Part II
Three days later

Relative to the news item that the squirrels in Cornwall are eating the white pine trees, we were inclined to have our doubts. We knew that squirrels will cut off and drop the pine cones in order to get the seeds that lie under the woody bracts. However, since reading the item in the press we have investigated and find that there are fresh white gnawed places on some of the pines. It appears to be a new thing and we should like to know the reason. At first we surmised that they might have the whooping cough and that they had found a book entitled "Every Squirrel His Own Doctor".

Whether it is the red squirrels or the gray squirrels which are eating the bark we have not determined. If it is the grays, they may have some special reason, for many a hunter has been able to provide the makings of a pot-pie through first hearing the hoarse bark of the gray squirrel. If it is not for the purpose of camouflage, there must be some good reason for this new departure. The evidence is against it but of course old Mr. Woodchuck may have decided that there is a long cold winter yet ahead and he may be the rascal who started loading up on cough medicine without waiting for Candlemas.

Old Timer.

Part III
Four days later

It appears that the Cornwall squirrels are at last beginning to wake up to a new item on the bill of fare. For some time, mice and squirrels in other parts of New England have been feasting on the white pines which have the blister rust disease. After the disease has a firm hold on a pine (in some cases as long as ten or fifteen years) the bark at the canker is very palatable to rodent taste. It is interesting to note the newly acquired ability of the Cornwall squirrels to act as blister rust scouts. They seem to have gone from tree to tree. The healthy trees have not been touched. The diseased trees are untouched except where the disease cankers occur. There the rodents have recently cleanly stripped the bark the entire length and circumference of the cankered area. It is possible that this work of the squirrels may help control the disease. If it does it will be only fair pay for the work that they may have done in spreading gooseberry seed from which grows the prickly bushes that pass the disease from the sick pines to the healthy pines.

It is not surprising that the squirrels have been somewhat slow to learn of the tasty rust cankers and that once having made the discovery that they are systematic in finding the affected trees. We remember hearing our grand uncle tell that when the potato bugs (called Colorado beetles) first came that he found where a skunk had discovered for the first time some potato vines loaded with a new kind of fat juicy bug. The skunk had eaten not wise - but too well. Evidence showed that he did not get far before he became so upset that he must have been a miserable skunk. Succeeding generations of skunks do not make the same mistake.

We shall expect from now on to see a good deal more rodent work on the pines which were infected years ago before the boys began to pull currant and gooseberry bushes. Some of the squirrel work noted goes back to infections originating in 1913.

E. D. Clark - Conn.

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FIVE-WING DISPLAY PANEL GOING OVER BIG

A blister rust exhibit emphasizing the importance of eradicating black currants has been made up for Massachusetts, New Jersey, Wisconsin, and Minnesota, and several others are being prepared for distribution. Mr. E. L. Chambers, State Entomologist of Wisconsin, with whom we are cooperating, writes under date of February 9 concerning the panel recently sent him:

"I wish to again thank you for the very excellent display panel of white pine blister rust control which you recently prepared for us. There is considerable demand for this type of exhibit material in Wisconsin now that so much interest is being taken in reforestation. I have already received several requests for the loan of this exhibit for use at farmers' institutes and meetings of this kind. It is now at LaCrosse where the owners of farm woodlots are very much interested in their white pine stands and are very anxious to save them if possible.

FARM BUREAU BACKS BLISTER RUST CONTROL IN MILFORD, N. H.

Next month the farm bureau at Milford will endeavor to enlist support for the town meeting articles appropriating money for fighting white pine blister rust. Experts say, and most people have now admitted, that only by eradicationg of all currant and wild gooseberry bushes can the white pine be saved from the rust disease.

White pine is one of the most valuable crops of New England. New Hampshire is one of the leading pine states. And some people may be surprised to learn that Hillsboro county leads all other counties in the state in white pine production. The northern counties raise much spruce, but this corner of the state is the leading white pine region.

Jan. 30, 1928. The Milford (N.H.) Cabinet.

GROWTH OF WHITE PINE PLANTATIONS

The following table gives the diameter and height of the average tree and the diameter of the maximum tree for a few existing plantations in the southern part of Michigan. The yield in timber is given in cubic feet. A. standard cord of wood contains 128 cubic feet of space of which, in a stacked cord, about 30 per cent is air space between the sticks, so that an average standard cord contains about 90 cubic feet of solid wood.

Table 5.--Growth of Forest Plantations

Species	Age years	Number of trees per acre	Diameter average tree, in.	Diameter maximum tree, in.	Ht. average tree, ft.	Yield per acre cubic ft.
White pine	8	500	1.3	2.7	9	--
" "	12	600	2.2	5.0	15	300
" "	18	680	6.0	9.0	28	1,600
" "	24	416	8.2	12.2	42	2,580

Figures of the yield per acre of some plantations in other states are given below. These data have been compiled from various Government and State reports.

White Pine, Iowa, 21 years old, 4,760 board feet per acre.
White Pine, New York, 28 years old, 24,000 board feet per acre.
White Pine, Massachusetts, 28 years old, 29,000 board feet per acre.
White Pine, Massachusetts, 43 years old, 37,716 board feet per acre.
White Pine, Massachusetts, 55 years old, 43,796 board feet per acre.

A. K. Chittenden, Extract from "Forest Planting in Michigan."
Spec. Bul. No. 163, June, 1927. Agri.Experi.
Sta. Michigan State College.

THE WOODGATE GALL RUST ON SCOTCH PINE (PINUS SYLVESTRIS)

Peridermium sp., Woodgate gall rust.

New York - a new gall rust on Scotch pine (Pinus sylvestris) caused by a species of Peridermium was discovered by Dr. Harlan H. York of the New York Conservation Commission during 1925. This rust was discovered in two regions of New York State; (1) northern Oneida County and Lewis County, (2) Southern Franklin County and Clinton County. Dr. York states that it may have existed in the state for many years. (Barrus).

First discovered by H. H. York, during the first week of June 1925, on Scotch pine bordering Round Lake near Woodgate, N.Y. Scotch pine was in plantings with Pinus strobus and Picea excelsa from seed broadcasted in '74, '79, '80, and '83, with Scotch pine predominating, reproducing itself naturally and quite freely. The trees ranged from one to twenty or more years of age. The seed was imported from Germany by Mr. R. Dallarmi who had made plantings of seedlings which he grew from seed himself of Pinus sylvestris, P. austriaca, P. strobus, and Picea excelsa in 1870. So far as is known no trees from outside sources were brought to this farm. The source of the infection of the Scotch pine is unknown. No other species is affected. No alternate host has been found although careful search has been made, and the Peridermium is undoubtedly autoecious at Woodgate. Infection is distributed throughout both the planted and the natural seeded areas, and is also known to have spread into plantations of Pinus sylvestris 110 miles distant from the Round Lake infection.

In cooperative work conducted by the State Conservation Commission and the U. S. Office of Forest Pathology it has been found that the Peridermium must have been present at Woodgate for at least thirty years. The amount of infection has increased rather rapidly since 1920. Infection apparently takes place on the current seasons' wood through the epidermis of the twigs and stems. Infections may occur on the axis where the staminate cones are borne. In 1926 aecia began to appear about the middle of May. The climax of aecia production occurred the first week in June. Viable spores were found in a canker August 21, 1926. In the majority of cases the cankers bear their first aecia the third season following infection. Some galls fruit only when two years old.

The Plant Disease Reporter
The Office of Mycology and Disease Survey
October 30, 1927.

Further mention of this Woodgate gall rust is made in an address by Dr. H. H. York on "Pests and Patience," which appeared on pages 87 and 89 of the Report of the Proceedings of the Twelfth Annual Blister Rust Conference Held in Albany, N. Y., December 9-10, 1926. (A mimeographed report of the Office of Blister Rust Control).

ONE DOZEN GOOD FOREST PRINCIPLES

The farmers of Berks County, Penna., have been conducting a campaign to make their farm woodlots better. They have made the undertaking simple to understand and have removed it from the more or less involved scientific classification of forest or woodland management. They have called it "The Better Woodlots Campaign". Their concise statement of how to make a better woodlot is as follows:

Cut	Save
1. Crooked trees	1. Straight trees
2. Short bushy-covered trees	2. Tall well-crowned trees
3. Diseased trees	3. Sound trees
4. Slow growing trees	4. Fast-growing trees
5. Poor timber trees	5. Good timber trees
6. Some trees where too thick	6. Enough trees per acre

Many of our forest wardens who own timber could follow these simple instructions and make their woodlot better. Nothing speaks so well for forest protection as clean, well-cared-for woods.

W. J. Q.
From News Letter of Maryland Forestry Dept.
Jan. 1928.

Edit:-
While the above has a particular application to the mixed hardwood forests of eastern Pennsylvania, it is believed that the blister rust agents may find the principles of some value in the northeastern states where white pine predominates.

FORESTRY PROTECTION BOARD

The Forest Protection Board is an interdepartmental board, organized under the Bureau of the Budget and composed of specialists in the District of Columbia, interested in protection of the forests from fire, insects and fungi.

The Forest Protection Board believes that cooperation and correlation in the protection of forested land in Federal ownership would be facilitated by the appointment of regional boards representing the different Federal agencies concerned.

Edit:-
In the regional divisions of North Idaho and Montana the Bureau of Plant Industry is represented by Mr. Stephen N. Wyckoff, 618 Realty Bldg., Spokane, Wash.
Mr. Wyckoff is in charge of the blister rust control work in the Western States.

OFFICE COMMENT

MEMORANDUM FOR MR. AVERY.

Dear Mr. Avery:

I have your memorandum of January 21, making inquiry as to what types of meetings your employees may attend without specific authority from the Secretary or the Chief of Bureau.

It would be my opinion that your people may attend informal meetings, directly in line with the work on which you are engaged, namely, blister rust control, without securing specific authority from the Secretary or the Chief of Bureau, where the meeting is informal and in the area to which the individual is assigned. Where an address before a formal meeting of any sort is contemplated even though directly on the subject of blister rust control, authority of the Chief of Bureau and by him of the Secretary should be secured.

While the regulations do not specify that the approval of the Secretary is necessary for meetings of State leaders or other groups of employees within a unit such as you outline, it has been the consistent practice of the Bureau to always submit to the Secretary recommendations for such gatherings. In these recommendations we have always included the names of the individuals we propose to have attend, the purpose of the gathering, and an estimated cost for each individual. As these gatherings represent substantial expenditures, it is believed to be desirable that the meeting be first considered by the office and, if deemed worth while, reviewed by the Chief of Bureau and the Secretary. With this approval secured, however, it would not be necessary to issue specific letters of authority if the authorizations the individuals have include the proposed travel itineraries.

Very sincerely,

(signed) W. A. Taylor

Chief of Bureau.

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Each employee should have available for reference United States Employees Compensation Commission form number 22, "Regulations concerning the Duties of Employee, Official Superiors, Medical Officers, and Others", relative to action to take in case of injury while performing official work. If you do not have a copy of this, you should write to the Washington Office at once for a copy.

H. P. Avery.

LETTERHEAD FORM AND FRANKED ENVELOPES FOR COOPERATIVE USE

The printing of cooperative letterheads and the use of penalty envelopes by cooperating employees are questions continually arising in divisions whose work is being carried on in some States jointly with the State or with other agencies. The following experience is related for the information and guidance of divisions having these problems to meet.

Recently the Division of Dairy and Poultry Products had up with the Post Office Department the matter of a letterhead which would be suitable for use by Federal-State employees under a cooperative agreement with the California Department of Agriculture. The Post Office Department definitely disapproved the use of the words "Federal-State" in the letterhead and recommended that the names of the cooperating agencies be given. The following letterhead had their approval:

United States Department of Agriculture, Bureau of Agricultural Economics, and California Department of Agriculture, Bureau of Dairy Control, Cooperating.	Cooperative Market News and Grading Service, Dairy and Poultry Products, In the State of California.

The use of penalty envelopes by Federal-State employees was one point brought out by the Post Office Department when this matter was taken up with them. It is the understanding of the administrative office that Federal-State employees not having Federal appointments may not legally use penalty envelopes except to mail to a Federal officer, such as a supervisor, official matter of the United States actually requested by them. In other words, where they are not employees of the Federal Government, they are not entitled to use penalty envelopes in sending mail to anyone except the United States official asking for it. The license given to a grader, for instance, who receives his salary from the State does not constiture an appointment and therefore does not place him in the catagory of a Government employee. He, therefore, does not have authority to use the Government frank except as mentioned above.

(From Dec. 27, 1927, issue of Bureau of Agricultural Economics News).

NEW MICHIGAN PARK CONTAINS VIRGIN WHITE PINE

The sixtieth and largest of Michigan's State parks has been presented by Mrs. Karen Hartwick, of Ann Arbor, as a memorial to her husband, Edward E. Hartwick, and her father Nels Michelson. It is an 8,236-acre tract near Grayling, Michigan, including 85 acres of virgin white pine said to be the only stand of this timber left in the lower peninsula. It will be known as the Edward E. Hartwick Pines Park. The State will reforest the cut-over portions and will build a lodge in which to exhibit relics of the old lumbering days. The Sallin Hanson Co., sold the tract to Mrs. Hartwick for $50,000.

Forest Worker. January, 1928.

COMPTROLLER'S DECISIONS

The appropriations provided for carrying into effect the Federal highway statutes are available for necessary expenses incident to participation in fairs and exhibits by the Bureau of Public Roads to diffuse among the people of the United States useful information on subjects connected with the lawful work of the bureau.

(The substance of this decision appears to be that under the terms of the basic statute creating the Department of Agriculture, "participation in fairs and exhibits * * * by the bureaus of the Department, the duty of which is to disseminate useful information, may be considered as a lawful part of the work of the bureaus.")

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Reimbursement for an amount alleged to have been paid by an Internal Revenue employee in a travel status to the wife of another Internal Revenue employee for lodging is not authorized.

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There is no authority under the act of March 4, 1913, 37 Stat. 843, to reimburse an employee of the Forest Service for the value of his horse, which was used occasionally in the movement of his camp from place to place, where the horse had been turned out to graze and had been found dead lying on its back in a hole.

* * * * * * * * *

Where the automobile of an employee of the Forest Service, being operated by him under a contract of hire entered into with the hiring officer of the Forest Service in accordance with Regulation A-4, National Forest Manual, was damaged while being used on official business without negligence on the part of the employee, reimbursement for the cost of repairs, is authorized under the provisions of the act of March 4, 1913, 37 Stat. 843, when approved by the Secretary of Agriculture.

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WESTERN WHITE PINE KILLED BY LIGHT FIRE

The extreme sensitiveness of western white pine to fire is illustrated by the results of a light fire that occurred on the Quartz Creek area of the Kaniksu National Forest, Idaho, in July, 1926. A study of fire damage on part of this area in the summer of 1927 indicated that a considerable proportion of the white pine trees had been killed outright, but many were still green. Examination of a large number of these green trees showed that the majority were dead but were drawing some moisture from the sapwood. Losses will approximate 100 per cent of the stand. A partial explanation of the reproduction of white pine after fires which has been in part attributed to seed storage appears in the fact that many of these green but dead trees were producing seed.

Forest Worker. January, 1928.

AMONG OURSELVES

Miss Nellie Harper was appointed clerk-stenographer in the Washington office, February 13, 1928. Mis Harper's appointment is temporary.

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Mr. S. B. Detwiler left Washington February 16, for a short trip through the northeastern States.

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Agent Harry A. Williams, stationed at Oneonta, N.Y., resigned January 31, 1928. He has been with us since June 14, 1922.

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Mrs. Myrtle Dowdy, formerly clerk-stenographer in the Washington office, has been reinstated in the department. Mrs. Dowdy will be in the Spokane office.

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Mr. Charles Ball, messenger in the Washington, office was transferred on February 11 to the Disbursing Office. Raymond McKnew will take Charlie's place.

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Mr. Herman J. Ninman, State Leader in Blister Rust Control in Wisconsin, who has been in the Washington office for some time, sailed from New York for Germany on February 9, on a three month's personal trip. While in Europe, he will study forestry conditions in Germany, Switzerland, and Italy.

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Mr. H. L. McIntyre visited the Washington Office on January 19, for a conference with Mr. Detwiler and Dr. Martin.

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Mr. R. A. Sheals, Quarantine Inspector, visited the Washington Office during January.

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Agent Rene LaRocque, stationed at Spokane, Washington, resigned February 4.

PUBLICATIONS

Blister Rust

Anon. Blister Rust Jumps Two Hundred Miles. Some Ribes Eradication Work in the West. Forest Worker January, 1928. p. 10, 13.

Western White Pine

Jacobson, N.G. Slash Disposal in Idaho White Pine. Timberman, December, 1927, p. 162-6.

White Pine

Tubeuf, Carl von - Das Schicksal der Strobe in Europa (The destiny of White Pine in Europe). Separate from Zeitscrift fur Pflanzenkrankeiten und Pflanzenschutz.

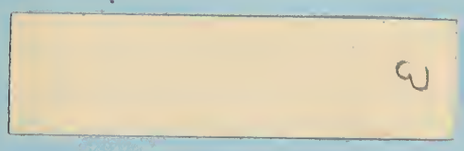
WESTERN WHITE PINE YIELD AND VOLUME TABLES

Yield and volume tables for the western white pine type in the Northern Rocky Mountain Region, prepared by I. T. Haig, assistant silviculturist of the Northern Rocky Mountain Forest Experiment Station, have been mimeographed for preliminary distribution. With the 34 tables are included a method for the application of normal yield tables and a site classification chart for western white pine stands. Second-growth volume tables are given for western white pine and the associated species. The yield tables indicate the possible yield in board feet and cubic feet by site indices for stands from 20 to 160 years of age. In addition the average diameter, number of trees, and basal area are given for stands of various ages.

These tables indicate that the second-growth western white pine stands on the best sites produce more than 1,000 board feet per acre per year. One outgrowth of the study on which these tables are based is the discovery that within a small margin of error the yields of individual western white pines are practically unaffected by the constituency of the stand, provided that white pine forms as much as 15 per cent of the total number of trees on the area.

A limited number of copies of this report are available to the public. Requests should be addressed to the Director, Northern Rocky Mountain Forest Experiment Station, Missoula, Mont.

Forest Worker. January, 1928.



BLISTER RUST NEWS

March 1928.

Volume XII

Number 3

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12, No. 3

E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 3 March, 1928

OBSERVING EYES

Apparently, but few of us have observing eyes - eyes that see details. This may be due to lack of cooperation between the "Chief of sight" and "His Majesty," the recorder of objects seen.

Take the discovery of the Woodgate rust for example; several persons visited the infected Scotch pine plantation at Woodgate, looked at the trees and apparently paid no attention to the rather conspicuous galls caused by the rust. Either the eyes failed to observe the galls or if they did, the brain failed to record their significance. Also, it seems very unlikely that the distribution of the Woodgate rust is limited to New York but as yet it has not been positively located outside of that State even though an "eye" has been kept out for it by several people, including our own personnel.

Another fungus which furnishes good eye test material is the European larch canker. This fungus is rather inconspicuous and apt to be found on planted European larch, Japanese larch, Douglas fir and western yellow pine but it seems that none of our field force have observed it in the course of their work. Coming closer to home, how many of us have inspected a pine tree without finding blister rust cankers, only to have some one else examine the same tree and immediately find infections which we failed to see?

We should train our eyes to see details and our minds to grasp and classify them. The one who is keen in observing, recording and classifying details has a great advantage over the rest of us. These attainments are of immense value in every walk of life and in our work they especially aid in scouting, in eradicating Ribes, in interviewing pine owners and in the many other duties connected with our work. Let us encourage our eyes to see. They are good teachers.

J. F. Martin

DATA WORTH SECURING

The necessity of having accurate data in the Washington Office on such points as the date of first appearance of the aecial stage of blister rust, date of heavy aeciospore dispersal, and date of maximum aecial production was shown recently to have a practical bearing on quarantine work. Fortunately observations have been made by a few men for a number of years and it was possible to use this material.

Such data as this can be easily secured if we realize its importance to the work. We should also have a definite place for filing our observations, so why not record them in the News for future reference. Besides data on aecia, we should have more observations on the earliest appearance of uredinia and telia on various species of Ribes for each year and for different localities. Let us get a complete record of these stages for 1928. If kept over a series of years they would furnish valuable data.

Concerning observations on Ribes, if I had charge of a district, I would want to know what the various Ribes species had been doing in past years, as date when they began to leaf out, date when all bushes of a species had leaves of sufficient size such that they could be distinguished for purpose of eradication, and date when they had attained full leaf. While the dates for the first leafing of a species, say Ribes cynosbati L., would vary by two or three weeks in the different years, the average date could be determined and used in the practical application of control measures.

Careful observation throughout the district might show that there were certain sites on which all species would leaf out at an earlier date than in other places. Advantage could be taken of this early leafing in planning control work.

The date of starting eradication, which is today based more or less on casual observation of Ribes leafing, is very important. At this time all Ribes are partially in leaf while most other shrubbery has hardly begun to leaf. A practical use of this date could be made by those pine owners who desire to destroy their own Ribes.

Observations on Ribes might also include abundance of fruiting and date of ripening of fruit, the date when birds or animals began to feed on the berries, and date of leaf fall. How many agents know the color of the flowers of different Ribes in their districts, date when flowers appear, color of fruit, number of seed in fruit, etc,? This information has practical uses. Let's collect it for the News.

Have any of the agents suggestions to make concerning other data which might profitably be gathered for the News by field men?

R. G. Pierce.

AECIA APPEARING ON WHITE PINE IN WASHINGTON

Mr. S. Edward Paschall a valuable collaborator of this office writing from Charleston, Washington, under date of March 14 states, "I am writing to report that blisters are now making their appearance. The protruding sacs were first observed yesterday, but from their size I judge they have been visible for some time. The present size is about 1/8 inch, on the average.

FRYEBURG (ME.) MEN GIVE THOUSANDS OF TREES FOR TOWN FOREST

Through the generosity of five prominent citizens, Fryeburg is to have a town forest.

At the annual town meeting today, the voters accepted the offer of T. C. Eastman (owner and manager of the Western Maine Forest Nursery at Fryeburg) to give and plant 2,000 trees for that purpose on land owned by the town, and then Asa O. Pike, B. W. Tinker, David Bradley and Charles Fox offered to give 1,000 trees each. Then Mr. Eastman raised the ante and offered to make it 5,000 trees, if others would give enough to make up a total of 20,000. It looks as though Fryeburg would have a nice forest started in the near future.

March 5, 1928 Press Herald, Maine

It is gratifying to note that Agent S. D. Conner writes under date of March 5, "Fryeburg recently completed their initial blister rust control program".

BLISTER RUST IS KILLING WHITE PINE IN HILLSBORO COUNTY, N.H.

The above is the title in big black heads of a full-size page advertisement in the Milford (N.H.) Cabinet of March 1. Agent C. S. Herr of Hillsboro worked up the ad with the assistance of Mr. Arthur B. Rotch, editor of the Milford Cabinet, and one of the members of the State Publicity Board. The page was illustrated by photographs Numbers one and six of Miscellaneous Circular 40, which were loaned by the Washington Office. The following appears in large type:

"In every town in Hillsboro County Pine Blister Rust is found. If unchecked it will destroy the white pines, just as the chestnuts have been destroyed. Unlike the chestnut disease, the Blister Rust Can Be Controlled.

Hillsboro County leads all other counties in New Hampshire in production of white pine. It is our most valuable native tree. Large industries depend on the continuance of white pine. It Must Be Saved. Indifference may destroy it. Delay is costly.

White pine grows on soil unfit for cultivation. It pays most of the taxes in some towns. It sends children to college. It pays mortgages. It furnishes employment for thousands of men.

PROMPT ACTION WILL SAVE THE PINE FROM THE FATE OF THE CHESTNUT"

* * * * *

Ads of this sort have been used by various agents from time to time. Have any of you been able to measure the returns? If so, how? What value or rating would you give this type of publicity compared to other usual methods of presenting blister rust material.

AN INTERESTING RE-ERADICATION JOB AT HARTFORD, VT.

During the past eradication season (1927) an area that was eradicated in 1923 was gone over again and some interesting facts were obtained. This area which is located in the town of Hartford, Vt., consists of approximately 200 acres, the growth being in part, pure pine, mixed hardwood and pine, pure hardwoods, and pasture with scattering pine. Most of the growth is under 30 years of age.

The Ribes on the area were eradicated in 1923 by one man, and 433 were destroyed, most of which were large bushes. In 1927 the eradication work was done by three men and a foreman, the same foreman being used who did the work in 1923. Of the 488 Ribes found, 15 were old bushes that had been missed in the original eradication and the rest were bushes less than four years old.

Two hundred and two of the 488 Ribes found on the second working, were located on about 10 acres of pure pine on a sloping hillside. At the time of the first eradication there was a number of large Ribes growing at the foot of the slope and some at the top. The presence of these Ribes is mentioned because they might have a bearing on the restocking that has taken place since the first working.

It would seem that occurrence of 286 Ribes on 190 acres is about what might be expected in the way of restocking, but it is hard to account for the restocking of 202 Ribes on the 10 acres, as this condition did not exist when the area was eradicated originally in 1923, and nothing has been done in the way of cutting or thinning to cause an opening in the pine stand which might cause Ribes seeds stored in the ground to germinate.

F. H. Rose - Vermont

Edit: - Mr. Rose is to be congratulated on the closeness of his observation which resulted in the data given above. Data of this kind is exactly what is desired by the Washington office and is the kind of information that makes the News interesting and worth while. We need a lot of this type of material and can put it to practical use, for benefit of the work as a whole. If any agent has similar data, please make it available for the News. We want it and need it.

Tips like the above are just what the men in charge of investigative work like to get. They plan to follow up this lead.

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NEW YORK'S RECORD OF WHITE PINE PLANTING

A recent summary of white pine planted in New York for all years, including 1927, with stock from the State nursery, showed that 44,293,761 white pine have been set out in 8,561 plantations. This does not necessarily mean that 8,561 individuals have planted white pine. In some cases, more than one plantation was made on a person's property. Calculating the number of trees per acre at about 1200, this would give an acreage planted of 36,911.

E. C. Filler

GOOD COOPERATION SECURED THROUGH WORK WITH YOUNG PEOPLE

While working in the various communities of my district, I find that thoroughly acquainting the rural school children with blister rust infection, and the part the Ribes play in spreading the disease, has materially helped in securing the cooperation of the neighboring pine owners.

In each case in the school room I have drawn on the blackboard a diagram to illustrate and bring out the points of the life cycle of the disease. Specimens of pine infected with blister rust were passed among the pupils and a circular given each to take home.

I have found the rural children much more keen on the subject than the city and town students. They always have questions to ask and often tell of places nearby where Ribes are large and numerous, or of exceptionally good stands of pine owned by their parents or neighbors.

The idea that, providing they destroy the Ribes, the pine seedlings and saplings of today will become logs for them to cut and draw to the mill in years to come always appeals to the boys, and I have found cases where they really made good their promise to destroy all the wild currants and gooseberries near the pines.

I recently "signed-up" an owner on a follow-up call, whose initial interview card was marked unfavorable. He said, "this blister rust must be straight goods if they teach it to the youngsters at school". I can recall quite a few cases where, in securing the cooperation of a pine owner, his son's interest in the matter was the deciding factor, and I believe that much influence can be brought to bear upon our prospective cooperators by appealing to them through the children.

W. E. Bradder - Vermont

Edit: This is a good news item, and should be of interest and value to other agents.

LANTERN SLIDES

A collection of slides has been sent several of the agents lately, particular pains being taken to supply slides of photographs taken in the Agent's district.

A Word to The Wise. Agents, if you have access to a lantern slide projector and have a collection of slides, look them over to see whether you have some taken in your own district. It's possible that the Washington office can supply you with others if you will let us know what you want.

Photographs taken in one's own district are likely to be better appreciated than those from other states, and attention might well be called by the agent to the fact of the scene being a local one.

R. G. P.

GERMAN FORESTER STUDIES OUR LOCAL CONTROL METHODS

Mr. H. F. von Maltzahn, a forester from Mecklenburg, Germany, accompanied Mr. L. N. Goodding and Mr. Detwiler in an inspection of blister rust control areas in the vicinity of Ipswich, Mass., and Kittery Point, Me., on March 11. The damage caused by European larch canker on larch, Douglas fir and Western yellow pine near Ipswich, Mass., was also observed.

Mr. von Maltzahn is a forester who has spent a year studying forest conditions in the United States and is now on his way back to Germany. He made a special visit to Washington to learn about our blister rust control work, stating that he believes it very suitable for application in German white pine plantations. Not much control work has been done up to the present in Germany. One reason for this is that white pine is an introduced species and the idea prevails there that it is best adapted for planting on heavy rich soil. For this reason plantations are often situated near cultivated areas. His observation in America leads Mr. von Maltzahn to the conclusion that white pine is a tree of the medium light soils and that it is possible to find suitable planting sites in Germany far enough removed from cultivated Ribes so that the pine will not be damaged by rust. Wild Ribes are scarce in Mecklenburg and in Mr. von Maltzahn's opinion there are very few cultivated black currants in the gardens, the public in this State having a preference for red currants and gooseberries. Mr. von Maltzahn is greatly interested in the blister rust and also in the larch canker on Douglas fir. He stated that he had never observed Douglas fir infected with this disease in Germany, but on his return would immediately make a search for it. Douglas fir and Sitka spruce are looked upon as especially good exotic species for forest planting in Germany.

Asked what he considered the most instructive example of forestry in America, Mr. von Maltzahn stated that he was most impressed by the Harvard forest at Petersham, Mass., and that every German forester might be able to learn in this forest. He particularly noted that Dr. Fisher is closely studying the ecological conditions and basing his management plans on "working with Nature." He was much impressed by his observations on the growth and management of white pine in the New England states and believes that this species is of greater forestry importance for Germany than has been generally considered to be the case in recent years by the German foresters.

Mr. Goodding is continuing his inspection trip to include the White Mountain region; Waterford, Vt., Keene, N.H.; and the heart of the New York white pine region around Chestertown and Warrensburg. He will be joined in New York by another Blister Ruster, Mr. A. Grasovsky. The latter has worked for several seasons on blister rust control in the West and is now attending the Yale Forest School where he expects to receive a Ph. D. degree this spring. The Colonial Office of the British Government has recently cabled Mr. Grasovsky offering him a very desirable position in the Colonial Service.

S. B. Detwiler.

WOODLOT DEMONSTRATIONS IN RHODE ISLAND INCLUDE PROTECTION FROM BLISTER RUST AND WHITE PINE WEEVIL

Four woodlot demonstrations were given in various parts of this state March 6, 7, 8, and 9 by the State Extension Service and the State Department of Agriculture cooperating. Mr. G. H. Collingwood, Extension Forester of the United States Department of Agriculture, was present as extension specialist to instruct the woodland owners in woodlot management. Mr. C. R. Tillotson, Inspector, U. S. Forest Service, visited Rhode Island at this time and took part in the meetings. Much interest was shown by woodland owners attending the demonstrations as to proper management and protection of the woodlots.

The State blister rust control agent, representing the State Department of Agriculture, cooperated with the State Extension Service by taking part in these demonstrations and was called upon to give information on blister rust conditions and white pine in the various sections of the state visited.

White pine weevil damage was prevalent in all the woodlots visited and the seriousness of this insect was brought out very clearly to those present.

Bad weather conditions allowed only small group attendance at the meetings but those attending appeared to be there to obtain all the information possible about forest practice. This is the first organized attempt by the State to encourage proper management of the woodland areas, and considering the conversation the results appear to indicate that woodland owners are interested in having much more of this work done in the future.

A. W. Hurford - R. I.

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THEATRE TICKETS REWARD BOYS AND GIRLS WHO PLANT WHITE PINE

Mr. John B. Eames who owns and operates eight large movie and vaudeville theatres in northern New Hampshire has worked up a novel scheme to interest school children in planting white pine.

Mr. Eames proposes to give a theatre ticket to each and every school boy or girl who will plant one or more white pines during Arbor week in their respective towns. He will likewise supply the trees for distribution.

It will be my duty to visit all the schools previous to Arbor week and instruct the teachers regarding method of planting, protection, etc., as they will in turn supervise the work of the school children during planting time. A Pathe News cameraman will be in Littleton, N. H. at the time to take pictures of the event, as we propose to give it wide publicity.

If the scheme works out as we anticipate and the children show an interest in this sort of thing, we will give them something to do on blister rust work before school closes in June. The proposition will be outlined in the press so that the venture will be news for everyone and we feel that a great deal of good will come from it.

Thos. L. Kane - New Hampshire

TOTAL OF 1,950,000 ACRES WORKED, 25,000,000 BUSHES DESTROYED OVER TEN YEARS

Thirty Towns in New Hampshire Have Not Yet Taken Control Measures--Others Have Cleaned and Rechecked Their Areas.

With 17 states--from Maine to California--engaged in white pine blister rust control, the protection of white pine has become something more than a regional problem; it has assumed a matter of national scope.

While the New England states and New York first undertook the eradication of currant and gooseberry bushes, today, the great states of Pennsylvania, Wisconsin, Michigan, Minnesota, Idaho, Montana, Washington, Oregon and California are cooperating with the federal authorities in the control of the disease which seriously threatens white pines.

Half Billion in Pine

It has been estimated that $550,000,000 represents the value of the white pines of the eastern and western states. Large wood-using industries, employing thousands of persons and distributing every year, millions of dollars, are dependent for their support upon white pine growth.

New Hampshire has not been slow to realize the importance of her white pine growth for, as far back as 1918, towns and cities to the number of 34 entered on a campaign against rust by voting $8,000 to be used in cooperation with the state forestry department. Each year since, there has been a steady growth in interest and accomplishment, until with the fall of 1926, there had been examined more than 1,750,000 acres, and nearly 23,000,000 currant and gooseberry bushes located and destroyed.

During this same period control measures had been carried on over 18 state forests, and also upon about 4,000 acresof federal owned lands in the White Mountains.

Towns Cooperate: 25,000,000 Ribes Destroyed

In the spring of 1927, about $29,000 was appropriated by 78 towns and cities, either to continue control measures, or to commence it for the first time. Slightly more than $3,000 was made available by individual pine owners for work on their own lands. State aid was given all these cooperators. As a result of such cooperation 151,759 acres were covered and over 2,000,000 currant and gooseberry bushes destroyed. Thus, from 1918 to 1927 inclusive, more than 1,950,000 acres were put under protection and better than 25,000,000 bushes destroyed.

Several towns, cities and individuals who had carried on such work in the early days of blister rust control desired to have their pine lands reexamined as they appreciated the fact that some regrowth might take place and also that bushes might develop from seeds which were in the ground at the time of the first examination. In this work 74,034 acres were covered and slightly more than 400,000 bushes destroyed, an average of only about six to the acre.

Still Neglected

Although the progress made in the control of this serious menace to pine growth has been encouraging, and is an indication that a large majority of the pine owners of the state feel it is necessary, nevertheless, there are about 30 towns in New Hampshire who have failed to make any attempts to check the spread of this disease.

In many of these communities a high percentage of the pines are already infected, although the disease has not progressed to the stage where considerable damage is apparent. The sentiment in these towns falls into two classes; one, that blister rust is not serious and two, that there is no need of doing anything until considerable infection is present.

So far as the first argument is concerned those that hold to this belief are in a hopeless minority. The second excuse is highly inconsistent, for blister rust control is not intended to protect or cure pines already diseased, but rather to prevent this valuable tree from becoming so. Such an argument is just as logical as to take out insurance on an empty cellar-hole after a building has been destroyed by fire.

Irrespective of taxation and a slump in stumpage and lumber prices, white pine still offers the best promise as a crop on a large percentage of Granite State land. The history of white pine shows an upward tendency for the past 23 years. Depression in prices, during that period, came and went as a natural law in economics, but the tendency was upward. There is no reason to believe but that this tree will increase in value.

The state forestry department has recommended to many New Hampshire towns that they continue blister rust control and offers to increase local funds 20 per cent. The supervision of control work is paid for by the Bureau of Plant Industry, U. S. Department of Agriculture. Thus, town funds and state aid are spent solely in the destruction of those plants so fatal to pine growth.

Mar. 9, 1928.

L. E. Newman in
The Union, Manchester, N. H.

Edit.- The above article was well illustrated with two photographs of blister rust, taken in New Hampshire. One of them shows Agent T. L. Kane of Grafton County, standing near three badly damaged white pine trees.

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MILFORD (N.H.) EDITOR AGAIN URGES BLISTER RUST CONTROL

All the towns about here will vote this year on making small appropriations for control of blister rust. Seven or eight years ago the disease, fatal to pines, was spread fast. Control measures were adopted and the spread was checked for a few years. Now it is starting again, and diseased trees have been found in several places in Milford and more in neighboring towns.

Nobody questions the necessity of controlling the rust--stopping its spread. Naturally some inquire why owners of pine timber should not pay all the bills. They are not large, only $200 is asked in Milford this year.

Perhaps the best answer is that pine is one of the principal public assets. It pays big taxes. Its loss would impoverish every town.

Cont. --

Public policy is to tax all property for the benefit of the majority. We charge everybody something for maintaining highways, though everybody doesn't own vehicles. School costs are distributed though not everybody has children. The fire department isn't charged exclusively to owners of inflammable property. You would have to pay something for the waterworks even if you never touched a drop. A sick man is an economic loss to the community, though the greatest loss is to his own family and employer, so we have a public health department for which everybody pays a little.

Actually, it is impossible for the individual owner of pine timber to buy or provide protection for his own trees or his neighbor's because blister rust does not spread from one pine to another. The owner of a worthless swamp where currant or gooseberry bushes thrive may not own a stick of pine. He may be indifferent to the fate of pine timber. But his worthless swamp may cause the death of every pine for miles around. Who is to go on his land and pull up the dangerous bushes, Federal and state men do it. They don't hurt the swamp and they don't cost much, but they save thousands of dollars of taxable property for the town and state.

3/8/28 Milford (N.H.) Cabinet

BAR HARBOR, MAINE, RAISES $2,000 FOR CONTROL OF BLISTER RUST

At the recent town meeting in Bar Harbor, Me., the sum of $2,000 was raised for blister rust control. This breaks the State record for any one town.

March 10, 1928. S. D. Conner -

In connection with the above item, it might be well to give a brief summary of the conditions at Mt. Desert Island, on which Bar Harbor is located. Shortly after it became known that blister rust was present on this island, The Bar Harbor Board of Trade invited Mr. Frost to tell them something about this disease and methods of controlling it, at their annual meeting in November, 1927.

Agent Conner who made a rapid survey of blister rust conditions there, just prior to this meeting, reported that the first plot examined contained 100 trees of which 65 were infected with blister rust. At another place one can look in any direction and see mature trees fairly 'burned up' with limb cankers. White pine seedlings in the forest nursery on the estate of John D. Rockefeller, Jr. were found diseased. Many of the large estates were given hurried examinations and in every case the disease was found on the pines.

The publicity given by several Maine newspapers to Mr. Frost's plea for control of the blister rust before the Annual Meeting of the Bar Harbor Board Trade, was very gratifying and no doubt aided in securing the funds for control of this destructive disease.

L.E.H.

A FUTURE GUARANTEED

(Extract from article "Beginner's Luck with Pines"
by Dorothy Canfield in "The Country Gentleman"
March, 1928)

***"As far as we have planted, the bare rocky ribs of our poor land are covered with a thick, green beneficent mantle of protection. And you, who know about land values, can figure for yourselves how much more valuable such land is than the scrawny acres which lay there before.

"The baby who watched with infant delight the portable saw rig at work on the level piece is only just now out of the grades and starting to high school. And see what the pines have done on the level piece in those few years.

"By the time that baby is grown up no camera will be able to take a picture of the whole of one of those pines. The nest egg started on useless land in his infancy will be a valuable possession by the time he is twenty-one, bringing in a little income from the thinnings. And by the time he needs to retire, say at sixty, the pines will provide a comfortable retiring annuity for him that will have cost him and his parents nothing but ordinary taxes.

"Really nothing else? Literally no care? Well, not quite. About six years after the pines were planted we shared in the panic about the blister-rust calamity. We took counsel with the forestry department and learned what everybody now knows, that blister rust cannot spread without the aid of currant and gooseberry bushes. If they were eradicated the disease could be reduced to a negligible matter.

"Could they be eradicated? Why not? A group of people walking at a leisurely pace through the woods six feet apart from each other can spot every wild gooseberry and currant bush. A twelve-year-old child can pull them up. They are pulled up and hung - like the criminals they are- roots in the air on the nearest bush. Twice, at intervals of two years, we have done this cruising back and forth through our pine tracts, and shall do it again two or three times, although few of the dangerous shrubs are left.

"And this is really all the care we have given our pines; all the care you can give the independent things. When I think of the million-times repeated nursing it takes to bring up a child or a colt or a chicken, the never-ending effort it is to keep the simplest house in order, the spraying and prunings and prayings you expend on apple trees - and then there's always something the matter with them! - I go out and roam cheerfully and wonderingly around in those thousands of vigorous, thriving upward-thrusting, self-sufficing pine trees which ask no odds of anything or anybody to hold their own. The very look of them, the very thought of them, rests me to the marrow of my bones." * * *

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... Every blister rust agent should secure this entire article for his working library. The article is simple, accurate and convincing. The author

has rendered a real service to our work in stating the blister rust control problem so effectively. We are most grateful to her.

The article contains a very useful thought for those of us who are in contact with the public and urging people to apply control. We need to be human and establish confidence. Perhaps we sometimes unconsciously "talk over people's heads," or fail to give them an opportunity to express the real questions which are in their minds. Most of us are more or less sensitive in appearing ignorant on matters which we think we should presumably be informed. On this point the author says "We encountered in those first researches into the subject not a single ordinary unprofessional person either in or out of a book who had had any experience in planting forest trees, with more resources in money or information than we had." I think we might not have had the courage to start if it had not been for a visit from the State Forester who, we found to our surprise, was quite ready to visit anyone with waste land to see if it were suitable for replanting. He was pleasant, interested in our small plan, willing to tell us anything we wanted to know. But I was too shy to ask the simple questions which were in my mind. They would have sounded foolish, I thought. With his long experience and his professional training he seemed almost as dauntingly far away as those books. But it was certainly his encouragement which started us off." ***

We hope Miss Canfield will write more about forest work and blister rust control.

S. B. Detwiler.

PRESIDENT COOLIDGE PROCLAIMS AMERICAN FOREST WEEK APRIL 22-28

President Coolidge has officially designated the week of April 22-28 for nation-wide observance of the annual "American Forest Week," in a proclamation announced February 27. The President set apart the week, he said, "for public discussion of our forests and of what must be done to safeguard and restore them."

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"The soil is the ultimate source of all our wealth and of life itself. One-fourth of our American soil is best suited for forests. Much of this land is already idle. More of it is being made idle by destructive logging and fire. Yet we can not safely permit our forest land to lie fallow and useless any more than we can permit our farms and factories to lie idle.

* * * * *

In his proclamation, President Coolidge urges that during the Week, "all citizens and appropriate organizations--including public officials, legislators, business organizations, educators, editors, clergymen, landowners, and others--give thought to the preservation and wise use of our forests, to the end that energetic forest policies will be adopted in all communities."

THAT OLD WOODLOT OF MINE

A number of years ago,
Yet not in the distant past,
I acquired an old woodlot
To which I am holding fast.

It was void of esthetic beauty
And low in commercial rank,
But its possible forest future
Was a thing on which to bank.

In looking thru for timber
Some said there wasn't much,
Except weeds and brush and briars
And slash and trash and such.

The chopper had cut the trees
Which he consider fit,
And all he had left for me
Was the stuff he couldn't git.

The previous growth on the lot
Had been mostly white pine trees,
Running skyward eighty feet
And withstanding every breeze.

After this mighty slaughter
It was sad to look around,
For the eye could see nothing
But litter, over all the ground.

But to a careful observer
Down on his hands and knees,
It was easy to find young seedlings,
On their way to mature pine trees.

The ground was actually covered
With pines a few inches high,
Hidden among the litter
And bound to reach the sky.

Nature had done its very best
To propagate the crop,
And man at the right moment
Came in and began to chop.

And now a few years after
The slash is entirely gone,
But the pines are there in numbers
And growing mighty strong.

Do you wonder that I'm holding
Fast to the old woodlot,
When prospects look so rosy
And it's all the stand I've got?

I wouldn't sell for a fortune,
At any rate, not just yet,
Because that's why I'm holding
And I know it's there - you bet.

W. J. Endersbee.
Berkshire Farmers' Bulletin, Feb. 1928.

RANDOM NOTES FROM MICHIGAN STATE LEADER

I talked over the Michigan State College Radio Station WKAR, on Friday February 24. Do not know how many people "attended the meeting" but will leave that for the statisticians to estimate.

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Breaking in here (Chicago) on quarantine work. This city is rotten dirty. My feet are in good shape though, so I'll be sure in at the finish.

D. J. Stouffer - Mich.

BLISTER RUST CONTROL PROGRESS IN MAINE DURING 1927

Nineteen hundred and twenty-seven was another very successful year in the control of white-pine blister rust; in fact it was our best year in some respects, reports W. O. Frost, of the Maine Forest Service, in his annual report.

"Control work was conducted in 58 towns in York, Cumberland, Oxford, Androscoggin, Sagadahoc, Lincoln, Kennebec, Knox, and Somerset counties. Of these towns 53 raised funds at their last March town meetings in order to cooperate with the State in controlling blister rust. In the other five towns pine owners conducted control work without town aid.

"The eradication season began early in May and ended early in September. It is always advisable to start work just as soon as the leaves appear on the wild currant and gooseberry bushes and to continue until their leaves begin to fall, which is usually about September 1. It is useless to conduct control work once defoliation takes place, as too many bushes are missed to make eradication pay.

"Thirteen hundred and seventy-two pine owners and fifty-three towns cooperated with the State and removed over 2,500,000 wild and over 10,000 cultivated currant and gooseberry bushes from over 33,000 acres of pine lands, protective strip included. In addition to this acreage the State and Federal men examined over 225,000 acres, destroying thousands of Ribes.

"The largest cooperator was the S. D. Warren Paper Company at Bingham, Somerset county. This company has conducted control work for the past two years around its white pine nursery, and white pine plantations, in the towns of Concord, Bingham, Athens, Brighton and Solon, working over 1400 acres, and destroying over 28,000 wild currant and gooseberry bushes. These precautionary measures were undertaken because blister rust was discovered in surprising quantities in these towns. Wild gooseberry and skunk currant plants were also found in great numbers. Removing them will prevent further spread of the rust, as it does not go from tree to tree. Owners of other commercial pine nurseries are also applying control measures in order to provide healthy planting stock."

As to blister rust infection conditions in the State, Mr. Frost says: "It is present in practically every pine lot in the southern half of the State, being more severe in some parts than in others, due to the greater abundance of Ribes (currant and gooseberry bushes) in some towns. Heavy infection has been located in a number of towns this winter, showing that 40 to 60 per cent of the young growth on these plots has blister rust. A few years ago this was not so, present conditions showing that the disease is spreading into uncontrolled areas very rapidly."

As an example to show what blister rust may do unless control measures are practiced, Mr. Frost says, "A certain party in Oxford county planted 15,000 white pines in 1916. In 1924 he found he had but 10,000 living, 5,000 having disappeared. Examination of the remaining 10,000 trees showed that 2,500 were infected with blister rust. He then got busy and eradicated the

wild gooseberry bushes around the plantation, thereby preventing further spread of the disease." This is a fair example. We have figures for many similar lots, showing what may happen wherever currant and gooseberry bushes are present within 900 feet of white pines, and it is our objective to teach the pine owners the necessary control measures, for blister rust can be controlled by destroying the alternate host plant, that is, all varieties of currant and gooseberry plants. Get them out and the rust is checked.

Future Control Work

Regarding future control work, Mr. Frost says that "Over 100 towns in York, Oxford, Cumberland, Androscoggin, Sagadahoc, Lincoln, Kennebec, Franklin, Somerset, Waldo, and Hancock counties have articles in their warrants to see if something cannot be done about checking further spread of the rust. If these towns see fit to raise small appropriations, the State and Federal Governments will furnish men to conduct the control work."

"As a further precautionary measure against the spread of blister rust, Forest Commissioner Violette issued the following order dated December 24, 1927: Order relative to Control of White Pine Blister Rust--In accordance with the authority invested in the Forest Commissioner by Section 6 of Chapter 178 of the Public Laws of 1917, the sale, transportation, further planting or possession of currant and gooseberry bushes (Ribes and Grossularia, including cultivated wild or ornamental sorts) is hereby prohibited in the following counties in the State of Maine, to-wit: York, Cumberland, Oxford, Franklin, Hancock, Androscoggin, Sagadahoc, Lincoln, Kennebec, Knox, Waldo and that part of Somerset county south of the towns of Carrying Place, Caratunk and Bald Mountains.

The above appeared in 14 newspapers in Maine, March 1, 1928.

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EUROPEAN LARCH CANKER IN RHODE ISLAND

The Office of Forest Pathology, Bureau of Plant Industry, reports the locating of a new outbreak of the European Larch Canker on planted Douglas fir in the Goddard Memorial Park near East Greenwich, R. I. The trees are about 35 years old and severely damaged by the disease. The cankers are so numerous on the trunks as to give them a beaded appearance. Also there are a large number of cankers on the branches. Many of the branches have been killed and in some cases only a few at the top of the trees are still alive. While there are not so many trees infected as on the Ipswich area in Massachusetts, the trees are larger and the damage caused by the disease more striking.

3/9/28 J. F. Martin.

Edit:-State Leader Hurford "wrote up" the Goddard Estate in the December, 1927, News Letter.

ILLUSTRATING THE USE OF THE DEMONSTRATION

"Seeing this field of crimson clover and hearing what the county agent and Mr. Holmes had to tell about it have completely convinced me that I should have been growing it for years," said a Clarke county farmer to me at a recent field meeting. This meeting of farmers was held on the farm of Roy T. Holmes under the supervision of County Agricultural Agent L. S. Watson. The crimson clover demonstration had been going on for five years.

Soils in the county had been cotton-farmed to the exhaustion of their humus supply. This is true of the farm of the farmer who made the remarks given above as well as many other farms in this district.

Right at these farmers' very doors had been for five years a practical illustration of a way to keep up the humus content without interfering with money crops. It took a well advertised field meeting with preliminary work through the local paper and at various community meetings to get the idea across to a group of farmers. However, it was the successful demonstration that did get the idea across.

During the last few years, agricultural extension workers have begun to appreciate the power of follow-up work in connection with the result and method demonstrations. The well planned follow-up to a sound demonstration of some needed practice very often has succeeded beyond the expectations of the extension worker.

When I was in the county agent work, I was startled by some follow-up work done in connection with seven orchard demonstrations. The follow-up consisted of three field meetings, several articles in the local paper, a few talks at indoor meetings, some personal contact work, and finally a carefully prepared circular letter sent to 1,000 people. I kept as accurate a record on this effort as it is possible for a county agent to get and found that in one season 200 farmers adopted the practices advocated.

The results were so striking and outstanding that I almost came to the conclusion that I could sit in my office and write articles for the paper and circular letters, and readily revolutionize the farm practices of the county. But it cannot be done that way. It is well that it is not so easy. Changes on the farm should not be made too quickly. In fact in most instances improvement of present practices is better than changes to new ones.

My purpose in writing this is to plead a cause. It is to sound a warning, if it is needed.

I narrowly escaped the temptation of substituting the manifestations of the real thing for the real thing itself. The results obtained from follow-up methods were so productive of numbers that I was sorely tempted to let down on the result demonstrations and try to use the modern salesmanship methods in place of them.

Without a well planned, successfully carried out result demonstration of some practice that is really needed, it is practically impossible to put across follow-up stuff successfully. A little experience will probably illustrate what I am driving toward. Several years ago, I was trying to demonstrate the preparing of land in the fall for cotton seeding the next spring.

Farmers had been having trouble in getting stands of cotton on freshly prepared soil, if after sowing, the weather remained dry for several weeks. The plan was to bed the land during late fall or early winter and plant on this ridge. This would give a stored-up supply of moisture in case it turned dry, and likewise good drainage for each row if it was wet after planting.

The first trouble I got into was with weeds and grass which came up with the cotton and, if rains followed, were difficult to kill. This trouble was overcome by harrowing ahead of planting. A few years later, I got into difficulty when, immediately after planting, a heavy rain packed the soil tightly over the seed and they could not get through. This was overcome by using more than the usual amount of seed on such soils as might crust. Year after year the difficulties were overcome.

The farmer with whom I was working, as well as myself, was getting a sound training in all the things needed to make the practice a success under farm conditions. Together we would study the experiments made by the colleges and experiment stations. The actual working of the demonstration kept us "on our toes."

When the demonstration had reached a stage where it could be called an unqualified success we were ready to "tell the world" about it. He was ready to tell his neighbors and those whom we corralled at field meetings at the demonstration or whom we brought to his farm on a tour. I was ready to start a follow-up with articles in the local paper, circular letter, posters, talks at club and community meetings, and personal contacts.

Without the demonstration we could not have made a successful follow-up. If we had stopped our work with the demonstration, he and I with the addition of a few neighbors alone would have profited by the effort.

J. William Firor in Better Crops with Plant Food,
February, 1928.

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PAVING THE WAY

A talk on blister rust control and woodlot management was given before the Exeter Grange on the evening of March 1. Protection and management of the wooded areas of the State was stressed to bring out the fact to the 30 people present that if the land owners desired to raise more than taxes on their woodlands they would have to practice forestry.

* * * * * *

An illustrated talk on blister rust control and the value of white pine was given before a group of 40 men at the Frenchtown Community Club on the evening of March 7. Colored slides on blister rust and white pine were shown in explanation of the disease and the methods of its control in protecting the most valuable timber tree in the state.

A. H. Hurford - R. I.

DEPARTMENT IDENTIFICATION CARDS

Hereafter, Department identification cards will not be issued to employees who have a transportation identification card.

H. P. Avery.

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COMPTROLLER'S DECISIONS

The Government services are required generally to advertise for proposals for contracts to be made by them, the purpose of which is to give all equal right to compete for Government business; secure to the Government the benefit of competition; prevent favoritism in public purchases and prevent collusion and fraud in letting public contracts. Similar advertising requirements have been imposed upon the Post Office Department for the carrying of mails, with some specific statutory exceptions, in view of which there appears no reason why there should not be advertising for bids for the carrying of mail by airplane, in the absence of specific statutory exception therefrom.

A bidder is not to be considered as not acceptable because newly organized or organized for the express purpose of the work, especially if performance bond is to be exacted. New services may require new organizations to be formed, and be in the interest of the United States to thus obtain bidders.

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Standardization of equipment, as against its procurement under competitive bidding, involves a question of policy that is no longer open for administrative consideration, the Congress having definitely determined the matter by the enactment of the provisions of section 3709 of the Revised Statutes requiring that all purchases and contracts for supplies or services, in any of the departments of the Government, except for personal services, shall be made by advertising a sufficient time previously for proposals respecting the same, unless immediate delivery of the supplies or performance of the service is required by a public exigency.

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Mere personal opinion unsupported by facts that supplies offered at a higher bid are of better quality and superior in material and workmanship to those offered at a lower bid is not sufficient justification for rejection of the lower bid.

Acceptance of other than the lowest bid is not authorized simply because the supplies or materials offered are of a better quality than those offered by the lowest bidder unless the proposals requesting bids specified the quality required by the Government and advised prospective bidders that the question of quality would be a determining factor in the acceptance or rejection of the bids.

Comptroller's Decisions (contd.)

In the purchase of automobiles, in ordinary cases, for the use of the United States, all makes and grades are for consideration in determining which will best meet the needs of the service, and bids should be requested on specifications drawn not by designation of a particular make nor to cover the mechanical construction of a particular make, but showing only such details as to the construction and performance requirements as can satisfactorily be shown to meet the needs of the service.

The make or model of an automobile such as "stock model" is not the controlling element as to the acceptance or rejection of a bid. If an automobile offered to the Government at a lower price conforms to the essential requirements of the specifications and will satisfactorialy meet the needs of the service the fact that it is not a stock model or that it has a belt-driven pump instead of a centrifugal pump in connection with the cooling system as specified and other minor mechanical differences, is not sufficient justification for the rejection of the lower bid and acceptance of the higher.

The fact that spare parts relate to a particular make of machinery does not alone permit their purchase from the manufacturer without advertising, but where it is established as a fact that such parts are proprietary to the manufacturer of the machinery in question, that the manufacturer is the sole distributor thereof, and that they can not be purchased elsewhere, thus eliminating the question of competition, they may be procured without advertising, their proprietary character making the purchase an exception to the requirements of section 3709 of the Revised Statutes.

The question as to whether only one dealer or manufacturer could furnish a truck that would meet the Government's requirements, or whether one dealer could furnish such a truck at a lower price than any other, is possible of definite determination only by soliciting competitive bids as contemplated by section 3709, Revised Statutes, and may not be left to the decision of an administrative officer without compliance with the provisions of said statute.

In advertising for bids for the furnishing of trucks to the Government, the specifications should be drawn not with reference to any particular make or to cover the mechanical construction of any particular make, but should be drawn to show the Government's needs in the matter of service requirements.

In the purchase of an automobile for use in the Government service by advertising, a stipulation in the specifications that it shall weigh not less than 2,700 pounds is improper and unauthorized, unless it can be shown that an automobile weighing less than 2,700 pounds could not meet the actual needs of the service.

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DESTROY OLD FORM 4 VOUCHERS

The old Form 4 vouchers used for reimbursement expenses are still occasionally being used. This form is obsolete and any copies you have on hand should be destroyed immediately. The new standardized Form No. 1012 supersedes old Form 4 and only this new form should be used. Vouchers made out on the old form will be returned for rewriting on the standardized form.

H. P. Avery

SUPREME COURT DECISION UPHOLDS CEDAR RUST LAW OF VIRGINIA

SUPREME COURT OF THE UNITED STATES

No. 199 - October Term, 1927.

Julia V. Miller, Ada V. Miller and C. O. Miller, Plaintiffs in Error, vs. W. J. Schoene, State Entomologist.	In Error to the Supreme Court of Appeals of the State of Virginia.

(February 20, 1928)

Mr. Justice Stone delivered the opinion of the Court.

Acting under the Cedar Rust Act of Virginia, Va. Acts 1914, c. 36, as amended by Va. Acts 1920, c. 260, now embodied in Va. Code (1924) as paragraphs 885 to 893, defendant in error, the state entomologist, ordered the plaintiffs in error to cut down a large number of ornamental red cedar trees growing on their property, as a means of preventing the communication of a rust or plant disease with which they were infected to the apple orchards in the vicinity. The plaintiffs in error appealed from the order to the Circuit Court of Shenandoah County which, after a hearing and a consideration of evidence, affirmed the order and allowed to plaintiffs in error $100 to cover the expense of removal of the cedars. Neither the judgment of the court nor the statute as interpreted allows compensation for the value of the standing cedars or the decrease in the market value of the realty caused by their destruction whether considered as ornamental trees or otherwise. But they save to plaintiffs in error the privilege of using the trees when felled. On appeal the Supreme Court of Appeals of Virginia affirmed the judgment. MILLER v. STATE ENTOMOLOGIST, 146 Va. 175. Both in the Circuit court and the Supreme Court of Appeals plaintiffs in error challenged the constitutionality of the statute under the due process clause of the Fourteenth Amendment and the case is properly here on writ of error. Jud. Code paragraph 237(a).

The Virginia statute presents a comprehensive scheme for the condemnation and destruction of red cedar trees infected by cedar rust. By paragraph 1 it is declared to be unlawful for any person to "own, plant or keep alive and standing" on his premises any red cedar tree which is or may be the source or "host plant" of the communicable plant disease known as cedar rust, and any such tree growing within a certain radius of any apple orchard is declared to be a public nuisance, subject to destruction. Section 2 makes it the duty of the state entomologist, "upon the request in writing of ten or more reputable freeholders of any county or magisterial district, to make a preliminary investigation of the locality . . . to ascertain if any cedar tree or trees... are the source of or constitute the host plant for the said disease . . . and constitute a menace to the health of any apple orchard in said locality, and that said cedar tree or trees exist within a radius of two miles of an apple orchard in said locality." If affirmative findings are so made, he is required to direct the owner in writing to destroy the trees and, in his notice, to furnish a statement of the "fact found to exist whereby it is deemed necessary or proper to destroy" the trees and to call attention to the law under which it

is proposed to destroy them. Section 5 authorizes the state entomologist to destroy the trees if the owner, after being notified, fails to do so. Section 7 furnishes a mode of appealing from the order of the entomologist to the circuit court of the county, which is authorized to "hear the objections" and "pass upon all questions involved," the procedure followed in the present case.

As shown by the evidence and as recognized in other cases involving the validity of this statute, BOWMAN v. VIRGINIA STATE ENTOMOLOGIST, 128 Va. 351; KELLEHER v. SCHOENE, 14 Fed. (2d) 341, cedar rust is an infectious plant disease in the form of a fungoid organism which is destructive of the fruit and foliage of the apple, but without effect on the value of the cedar. Its life cycle has two phases which are passed alternately as a growth on red cedar and on apple trees. It is communicated by spores from one to the other over a radius of at least two miles. It appears not to be communicable between trees of the same species but only from one species to the other, and other plants seem not to be appreciably affected by it. The only practicable method of controlling the disease and protecting apple trees from its ravages is the destruction of all red cedar trees, subject to the infection, located within two miles of apple orchards.

The red cedar, aside from its ornamental use, has occasional use and value as lumber. It is indigenous to Virginia, is not cultivated or dealt in commercially on any substantial scale, and its value throughout the state is shown to be small as compared with that of the apple orchards of the state. Apple growing is one of the principal agricultural pursuits in Virginia. The apple is used there and exported in large quantities. Many millions of dollars are invested in the orchards, which furnish employment for a large portion of the population, and have induced the development of attendant railroad and cold storage facilities.

On the evidence we may accept the conclusion of the Supreme Court of Appeals that the state was under the necessity of making a choice between the preservation of one class of property and that of the other wherever both existed in dangerous proximity. It would have been none the less a choice if, instead of enacting the present statute, the state, by doing nothing, had permitted serious injury to the apple orchards within its borders to go on unchecked. When forced to such a choice the state does not exceed its constitutional powers by deciding upon the destruction of one class of property in order to save another which, in the judgment of the legislature, is of greater value to the public. It will not do to say that the case is merely one of a conflict of two private interests and that the misfortune of apple growers may not be shifted to cedar owners by ordering the destruction of their property; for it is obvious that there may be, and that here there is, a preponderant public concern in the preservation of the one interest over the other. Compare BACON v. WALKER, 204 U. S. 311; MISSOURI, KANSAS & TEXAS RY. v. MAY, 1924 U. S. 267; CHICAGO, TERRE HAUTE & SOUTHEASTERN RY. v. ANDERSON, 242 U. S. 283; PERLEY v. NORTH CAROLINA, 249 U. S. 510. And where the public interest is involved preferment of that interest over the property interest of the individual, to the extent even of its destruction, is one of the distinguishing characteristics of every exercise of the police power which affects property. MUGLER V. KANSAS, 123 U. S. 623; HADACHECK v. LOS ANGELES, 239 U. S. 394; VILLAGE OF EUCLID

v. AMBLER REALTY CO., 272 U. S. 365; FERTILIZER CO. v. HYDE PARK, 97 U. S. 659; NORTHWESTERN LAUNDRY v. DES MOINES, 239 U. S. 486; LAWTON v. STEEL, 152 U. S. 133; SLIGH v. KIRKWOOD, 237 U. S. 52; REINMAN v. LITTLE ROCK, 237 U. S. 171.

We need not weigh with nicety the question whether the infected cedars constitute a nuisance according to the common law; or whether they may be so declared by statute. See HADACHECK v. LOS ANGELES, SUPRA, 411. For where, as here, the choice is unavoidable, we cannot say that its exercise, controlled by considerations of social policy which are not unreasonable, involves any denial of due process. The injury to property here is no more serious, nor the public interest less, than in HADACHECK v. LOS ANGELES, SUPRA; NORTHWESTERN LAUNDRY v. DES MOINES, SUPRA; REINMAN v. LITTLE ROCK, SUPRA, or SLIGH v. KIRKWOOD, SUPRA.

The statute is not, as plaintiffs in error argue, subject to the vice which invalidated the ordinance considered by this Court in EUBANK v. RICHMOND, 226 U. S. 137. That ordinance directed the committee on streets of the city of Richmond to establish a building line, not less than five nor more than thirty feet from the street line whenever requested to do so by the owners of two-thirds of the property abutting on the street in question. No property owner might build beyond the line so established. Of this the Court said (p.143), "It (the ordinance) leaves no discretion in the committee on streets as to whether the street (building, semble) line shall or shall not be established in a given case. The action of the committee is determined by two-thirds of the property owners. In other words, part of the property owners fronting on the block determine the extent of use that other owners shall make of their lots, and against the restriction they are impotent."

The function of the property owners there is in no way comparable to that of the "ten or more reputable freeholders" in the Cedar Rust Act. They do not determine the action of the state entomologist. They merely request him to conduct an investigation. In him is vested the discretion to decide, after investigation whether or not conditions are such that the other provisions of the statute shall be brought into action; and his determination is subject to judicial review. The property of plaintiffs in error is not subjected to the possibly arbitrary and irresponsible action of a group of private citizens.

The objection of plaintiffs in error to the vagueness of the statute is without weight. The state court has held it to be applicable and that is enough when, by the statute, no penalty can be incurred or disadvantage suffered in advance of the judicial ascertainment of its applicability. Compare CONNALLY v. GENERAL CONSTRUCTION CO., 269 U. S. 385.

AFFIRMED.

THE LARCH CANKER IN GREAT BRITAIN*

This disease is extremely common; it is present in greater or less abundance in nearly every plantation of the common larch (Larix europaea) in Britain. Japanese larch (Larix leptolepis) is seldom attacked; on the other hand, West American larch (Larix occidentalis), so far as experiments have shwon, appears to be even less resistant than the European species.

It generally appears as a depression in the bark of the stem or branch. This deformation is frequently accentuated by increased growth in thickness on the other side of the stem and on the flanks of the canker. The bark in the neighborhood of the canker is usually somewhat cracked and dark in color, with resin oozing freely from it. In old cankers, the dead bark falls away and the wood becomes exposed. In most, warm weather the fructifications of the fungus may be found especially near the edge of the canker, which tends to become larger each year. Frequently, however, the tree gets the better of the fungus, and having killed it by preventing it from reaching new tissue, the affected part is eventually covered by new wood, so that externally no sign of earlier attack may be perceptible.

The stems of young trees may be completely girdled, in which case the tree dies. Larger stems, however, are seldom killed in this way, and a few cankers on an otherwise healthy tree do not appreciably affect the rate of growth, although, of course, they reduce the value of the timber.

The fructifications of the fungus are small (1/10 - 1/6 inch in diameter), saucer-shaped and shortly stalked. The rim and under surface of the saucer are white, and the concave surface is yellow or orange. The spores are borne in the concave part and when ripe are ejected and may then be carried away by currents of air, thus causing infection elsewhere. The fungus occurs both as a parasite and as a saprophyte, and is particularly common on dead branch.

Mode of Infection

Numerous experiments have shown that the fungus can only gain admission through the stumps of dead branches or by means of wounds. The mycelium, which lives saprophytically on the dead branches, may extend its growth into the main stem and there become parasitic on the living tissues. This method of attack is probably the most frequent, and remains of the branches which were responsible for the introduction of the disease may often be found near the middle of a canker. Cankers may also be brought about by spores of the fungus entering wounds made during planting operations, or by the gnawing of the bark by rodents, but as such wounds are quickly protected by resin they are only dangerous for a short time. The pruning of trees seldom, if ever, gives rise to the disease.

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*Leaflet No. 16 of the Forestry Commission of London, England. July, 1927.

Larch Canker (Contd.)

Methods of Control

Larch is often planted in soils and situations which are unsuitable and lead to the crop getting into an unhealthy condition. Careful selection of sites is therefore of primary importance. A damp, stagnant atmosphere, places subject to late spring frosts, heavy, badly-aerated soils, and dry, shallow slopes should not be planted with larch. Although openness of soil is essential poor gravelly and sandy soils are to be avoided.

Careful planting, together with the proper cleaning or weeding of young plantations and the elimination of weakly plants, assists to some extent in warding off attack. The planting distance should never be less than 4-1/2 feet, and, on the better sites, may be as much as 5-1/2 to 6 feet. During the development of young plantations, severely cankered and otherwise unhealthy trees should gradually be removed in the thinnings.

Overcrowding in larch woods gives rise to conditions favourable to the disease and should therefore be avoided. If a larch plantation is kept dense, the trees are "drawn up," the stems lack girth, their length becomes disproportionate to the crown, "whipping" stems develop and the whole crop is rendered susceptible to fungus attack by reason of the reduced vitality of the individual trees. Frequent light thinnings are therefore recommended.

Those who are dealing with small areas may improve their larch woods by removing dead branches from the lower parts of the stems, but this treatment is seldom practicable in the case of large plantations.

Apart from frost and the unsuitability of certain soils and situations, probably the most important influence predisposing trees to attack is the larch aphis, which so often causes the trees to get into an unhealthy state.*

In forming new plantations, it may be advisable to associate with the larch, either in groups or singly, trees which are not subject to attack. Soil-improving species such as beech, and in the South, Spanish chestnut, are particularly suitable for use in this way because their leaves add to the fertility of the soil and more head-room is given to the light-demanding larch.

It will be seen from the above that all measures recommended for the prevention of loss have the same object, viz., to promote the vigour of the individual tree and enable it to throw off the disease.

Provided the soil and situation are suitable, planters need not be discouraged if reasonable care be taken on the lines here indicated.

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*For particulars regarding this insect, see Forestry Commission Leaflet No. 7, "Chermes attacking Spruce and other Conifers".

EDit: This disease is now known to be present in New England, and may do considerable damage. The earlier that infected larch are found and reported to the Office of Forest Pathology at Washington, the better.

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Blister Rust

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McCallum, A. W.
White pine blister rust. Forest pathology for the year 1926. In Rep. Dom. Bot. 1926. Rep. Canada Exp. Farms 1926; 17-24.

QUARANTINE

WHITE-PINE BLISTER RUST QUARANTINE AMENDED

As a result of the advance of the white-pine blister rust during the season of 1927, an amendment to Federal Quarantine No. 63, on account of this disease, adding the State of Idaho and four counties in Oregon (Clackamas, Hood River, Multnomah and Wasco) to the territory designated as infected, and making other changes in the regulations, is announced by the United States Department of Agriculture.

* * * * * * *

The amendment takes effect March 1, 1928. Shippers in the newly quarantined territory must comply with special restrictions in order to ship currant and gooseberry plants to points outside the State. Five-leafed pines are prohibited under the amendment from being moved interstate out of the above-named counties in Oregon. They may not be moved from Idaho to any other State except into Washington and then only under special regulations.

Notice is also given that since Idaho has recently established a blister-rust control area, any shipment of currant or gooseberry plants or five-leafed pines into that State must be accompanied by a control-area permit from the Director, Bureau of Plant Industry, Boise, Idaho.

* * * * * * *

Specifications for the lime-sulphur dip required for immersing currant and gooseberry plants shipped from infected States remain as heretofore; but a slight change is made in the wording to show that the measurement of ingredients is to be by volume. Only concentrated lime-sulphur solution, properly diluted, may be employed for this purpose as dry lime sulphur has been found harmful to the plants. This regulation is further simplified by omitting the requirement that currant and gooseberry plants obtained by permittees from uninfected States may not be shipped interstate unless examined by an inspector and found by him to meet the requirements of the quarantine.

State of Michigan
DEPARTMENT OF AGRICULTURE
Herbert E. Powell, Commissioner

Bureau of Agricultural Industry
A. C. Carton, Director

NOTICE OF RULES AND REGULATIONS FOR THE SUPPRESSION AND CONTROL OF THE WHITE PINE BLISTER RUST

Whereas; a dangerous and injurious disease known as the white pine blister rust, Cronartium ribicola Fischer is present in the State, and

Whereas; measures for the suppression and control of the disease are being applied within the State, and

Whereas; white pines which are being grown for reforestation purposes should be protected from the white pine blister rust to prevent the distribution of this destructive disease through the use of infected planting stock.

Now, therefore, I, Herbert E. Powell, Commissioner of Agriculture for the State of Michigan, under and by virtue of the authority conferred upon me by the statutes of this State, do hereby order and declare, that the following townships or parts of townships in the State of Michigan, have been set aside as white pine blister rust control areas, towit:

An area including the Michigan State College Forest Nursery at East Lansing described as follows: the southwest quarter of section eighteen and the north half of the northwest quarter of section nineteen (S.W. 1/4 of Sec. 18 and N.1/2 of N. W. 1/4 of Sec. 19) Township four north, Range one west (T. 4N. - R. 1 W.) Meridian Township, Ingham County.

An area including the State Forest Nursery at Higgins Lake described as follows: the southeast quarter, the east half of the southwest quarter, the southeast quarter of the northwest quarter, and the south half of the northeast quarter of section thirty-five (S.E. 1/4, E. 1/2 of S.W. 1/4, S.E. 1/4 of N.W. 1/4 & S.1/2 of N.E. 1/4 of Sec. 35) Township twenty-five north, Range four west (T. 25 N. - R. 4 W.) Beaver Creek Township, Crawford County;

An area including the United States Forest Service Nursery at East Tawas described as follows: Blocks Thirteen, fourteen, and Fifteen of Newman's Addition, City of East Tawas, Iosco County, together with a protection strip fifteen hundred feet in width entirely surrounding said Blocks:

and the possession and planting of all plants, roots, scions, seeds or cuttings of the genus Ribes and Grossularia (currant and gooseberry plants) in these areas is prohibited.

These rules and regulations shall be effective on and after March 1, 1928.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Department of Agriculture, this twenty-fifth day of February, Nineteen hundred and Twenty-eight.

sgd. HERBERT E. POWELL
Commissioner of Agriculture.

leh 3/9/28

AMONG OURSELVES

Mr. H. J. Ninman, State Leader in Blister Rust Control in Wisconsin, who is on a three month's trip in Europe, writes under date of February 26, from Berlin. "I have spent several days at the biological institution at Dahlem, the headquarters of plant disease and insect control. I saw Dr. Appel, Dr. Ludwig, Dr. Wollenweber, Dr. Sachtleben, Dr. Morstatt (in charge of the library), and others. These professors have been very kind to me. Dr. Ludwig intends to go on a trip with me Monday to visit a forest nursery. Dr. Appel is arranging a program for me to visit nurseries and state forests in southern Germany."

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According to a news item from the Pittsfield (Mass.) Eagle of February 11, the business men of Great Barrington have formed a bowling league. W. J. (Bill) Endersbee is Captain of one of the teams, which is known as Endersbee's Pine Blisters.

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Agent Endersbee of Berkshire County, Massachusetts, is scoutmaster of Troop 56 of Gt. Barrington at a recent celebration of the birthday of the Boy Scout movement in Pittsfield which was attended by over 500 people the first night, the forestry booth of Troop 56 was among those which attracted most attention.

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Mr. Edger T. Holland of the Washington Office and Miss Mabel Anderson of Veteran's Bureau eloped to Baltimore and there married on Feb. 18, 1928.

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Mr. Harrison G. Strait had his headquarters changed from Hudson to Poughkeepsie, N. Y.

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Mr. Leslie N. Goodding State Leader of Oregon arrived at the Washington Office Feb. 18th; after spending two weeks in the office he left for a field tour of the Northeastern states to study blister rust conditions.

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Mr. J. E. Riley, State Leader of Connecticut arrived at the Washington Office March 13th for a short stay to work up experimental data secured at Canaan, Conn. in his study of "Some factors concerning crew efficiency".

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Mr. H. J. Miles who resigned Dec. 31 is now working with a private concern in an equalization survey, the purpose of which is to revalue town property for taxation purposes. His address is still at Putman, Conn.

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BLISTER RUST NEWS

April 1928.

Volume XII

Number 4

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 4 April, 1928

NEWS GATHERING

Congratulations are in order to the contributors to the March number of the Blister Rust News on the character of the short articles which they submitted. Some were pithy, others pointed, while brevity characterized the majority of the items. Newsy and full of meat, we like to read that kind.

The idea is to cultivate our news sense, record our observations, develop our theories, test them and then instead of hoarding the facts concerning our results, let somebody else know about it. Write the matter up concisely for the benefit of the other agents.

To the new men who have come into the work in the past few years, please don't feel that your opinions are not as welcome as those of the agent in the adjoining county who has been longer on the job. Your opinions may not be as seasoned by experience as his, but your viewpoint is a new one, a fresh one and hence is valuable.

R. G. Pierce.

NEW YORK BLISTER RUST AGENTS HOLD SPRING CONFERENCE IN ALBANY

On April 2 the agents of New York held a one day conference in the office of the Conservation Department in Albany, for the purpose of getting everything all set for the 1928 open season on Old Man Ribes.

Talks were given by Mr. Filler of the Boston Office, Mr. Howard, Supt. of Lands and Forests, Dr. York of the Conservation Depart, and Mr. Stevens in Charge of Exhibits. Mr. Stevens' request for a slogan to be used at the top of all blister rust exhibits brought out so many suggestions that a deciding vote could not be obtained on any one slogan. Stevens was still muttering, "My kingdom for a slogan" as the meeting adjourned.

In addition to the regular Ribes eradication in pine areas this season, a survey of the black currant situation is to be undertaken. A general clean-up of the environs of privately-owned nurseries growing white pine is also contemplated.

Agent Bowlby reported at the conference that the snow in his district (Lewis County) was still waist deep and car travel was still out of the question.

C. E. Baker - New York.

AGENT BOWLBY'S EDUCATIONAL PLANS SUCCESSFUL

Agent Bowlby of Lowville, New York has been very successful with a recent article on black currants published in the local papers. In a brief note he states that he has already had a response from it. One man called on the Agent and told him he had a big black currant in the rear of his yard and he wished the Agent to come and take it out.

Besides the news article on black currants, Bowlby sent out a mimeographed letter to the pine owners in the towns of Diana, Croghan, New Bremen, Watson, Grieg and Lyonsdale, calling attention to the blister rust inspection which is to be carried on in their neighborhood and requesting their cooperation. A return card was enclosed, requesting the following information:

1. Township Name
2. Acreage of pine land
3. Your own lot number, if possible
4. Number of white pine you have planted if any.
5. Names of pine-owners adjoining your land
6. Directions how to reach your pine
7. Your name

Of the 190 cards sent out 135 were returned. This was a very good percentage.

BLISTER RUST FOUND ON PINE IN WELLESLEY, MASS. FOR THE FIRST TIME

Agent Brockway recently scouted all one day in the town of Wellesley, his prime object at the time being to locate infection on pine, but to no avail. The following day found him still in pursuit. Finally, a 1916 infection was located in the Wellesley Farms section of the town. It was soon determined that the pine had been planted and was on a portion of the Hubbard Estate. The superintendent was interviewed, and a two hour walk about the property in a snow storm was next in order. More infection was picked up during the course of this instruction tour. Final results: Infection was found for the first time in the town of Wellesley, and the superintendent of the Hubbard Estate will put on a crew to go over the 700 acres, at word from the Agent subsequent to April 15.

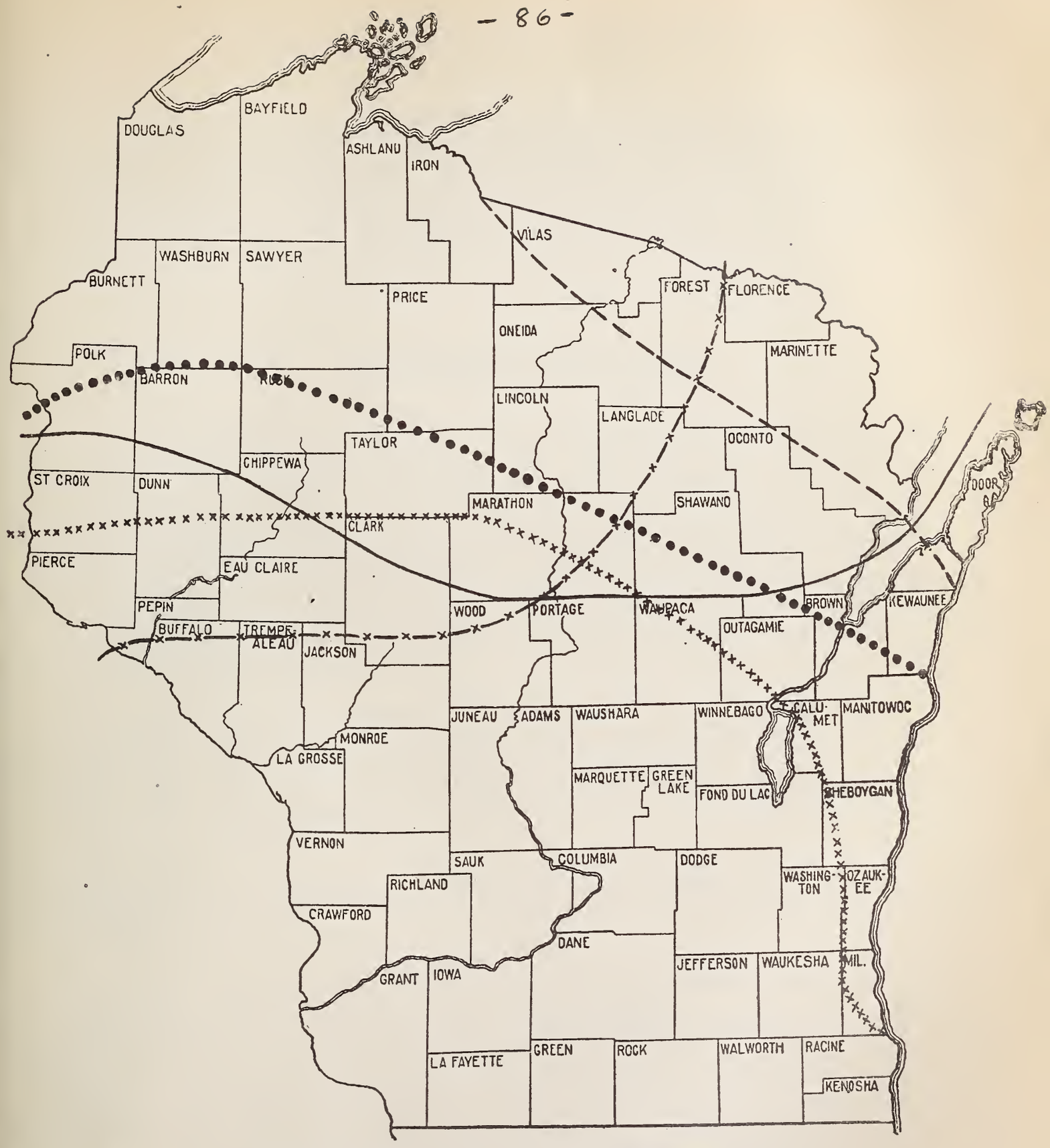
BLISTER RUST AGENT COOPERATES WITH EXTENSION FORESTER IN WOODLOT DEMONSTRATION

Several woodlot demonstrations have been held this winter in Plymouth county, Mass., in connection with the Plymouth county Extension Service and Extension Forester Parmenter. While the attendance at all these meetings has been fair, the results have been very gratifying. At one demonstration, one owner on being assured that his pine will not all die on account of blister rust, has improved his lot by thinning operations. Another individual representing the National Fire Works Company at Hanover, upon being assured that there were no Ribes in his locality, has placed an order for 100,000 pines to be planted this spring. The same owner will also have his land re-classified according to the Massachusetts Forestry Tax Law. This law is becoming a valuable incentive to persons interested in reforestation in the State. As one travels about the country, it is quite noticeable that many people are taking better care of their woodlots. These owners may not have been present at the meetings, but they have apparently either talked with others or have been reading articles in the local papers and magazines.

E. M. Brockway - Mass.

MAP OF WISCONSIN SHOWING PROBABLE DISTRIBUTION OF WILD RIBES

This map of Wisconsin shown on the opposite page was drawn, I believe by Professor C. E. Allen of the Botany Department of the University of Wisconsin in 1919. He also prepared a key to the Ribes of Wisconsin. This chart is shown here for the information of our readers who are not familiar with Ribes distribution in that State.



Probable Range of Wild Species of Ribes in Wisconsin

——— Southern limit of *R. lacustre.*
● ● ● Northern limit of *R. gracile.*
x—x—x Southern limit of *R. oxyacanthoides.*
——— Southern limit of *R. prostratum.*
x x x x x Southern limit of *R. triste.*
R. Cynosbati and *R. floridum* (*R. americanum*) probably occur throughout the state.
R. hudsonianum may be found in the neighborhood of Lake Superior.

INTENSIVE WINDOW DISPLAY DRIVE NEARING COMPLETION

During the winter, window-displays have been placed in stores in all the towns in southeastern Massachusetts, where Ribes eradication work is contemplated for 1928. In connection with these displays, the assistance of the local news reporter is always solicited, and an article regarding the exhibit appears in the local newspaper a week in advance. The final display in the drive will be placed in the Bay State Drug Company in Foxboro, on April 12.

E. M. Brockway - Mass.

THE PROBLEM OF RE-ERADICATION

Our blister rust program has entered its sixth year and much water has flowed under the bridge since May, 1922 and many Ribes have passed out of existence, to the betterment of white pine. The writer has been located in the same district which is composed of Windsor and part of Orange Counties, Vermont, since the beginning of the present control program. The object in 1922 was to get the Ribes out as efficiently and as economically as possible, and this has not changed any to speak of today, except as the problem of re-eradication has entered our work. Re-eradication was not thought of very much in 1922, but as the years passed it has been coming into the foreground. Some of the points we have to consider now are:

1. Will re-eradication be necessary.
2. Will the pine owners cooperate in re-eradication.
3. What will be the cost of re-eradication.
4. When will it be necessary to re-eradicate, and
5. What bearing will blister rust have on the future growing of white pine.

These and other questions come to mind from time to time, and I wonder if we have solved any of them, and if we are in a position to apply the solution to the benefit of our work.

The first, we can answer from our past experiences as we know it will be necessary to re-eradicate certain areas at different intervals of years, depending on the age of the pine stand being protected, species of Ribes found, whether it is a wet or dry site, and other factors entering into the restocking of Ribes. These present an interesting problem as most areas differ from one another and then again they differ in part as to the age of the pine and as to Ribes conditions. Last year some Ribes studies were made and results showed that it will be necessary to study an area very thoroughly before re-eradicating. As an illustration, upon examination of an area which was eradicated in 1923, parts of this area on which a large number of Ribes were found at the time of the initial eradication showed little or no restocking, whereas other parts that did not have nearly as many Ribes in 1923, showed a large restocking of Ribes. Then on another area we get the following result: in 1923, 2 Ribes per acre and in 1927, 20 Ribes per acre. These data show that conditions will change and it will be hard to lay down any hard and fast rule to govern an area regarding the restocking of Ribes.

In regard to owners re-eradicating their lands, I believe that they will, since one of the first questions asked an agent while he is explaining blister rust to pine owners is, when will it be necessary to eradicate again. Then there has been some re-eradication work done to date. Also in meeting old cooperators they ask when the agent is going to inspect their lot again, so I think that as far as the pine owner is concerned, he will cooperate in re-eradication as he did in the original eradication.

As to the cost of re-eradication it seems that if the area is carefully scouted, the cost will be much lower, in most cases, than the original work. Ribes studies made in 1927 of areas eradicated in 1923 show that re-eradication will be necessary only along fence rows, stone walls, and in swampy places, where a scout can be used, thereby reducing the cost. On areas where Ribes have restocked generally and it is necessary to use a crew for all the work, I do not think that the cost of re-eradication will differ very much from the cost of the original work, even though there may be fewer Ribes per acre.

When it will be necessary to re-eradicate depends, it seems to me, principally on the following factors: the number of Ribes per acre, location of Ribes, the amount of infection taking place, and last, but of great importance, the age of the pine stand being protected. It is impossible to work at blister rust control without observing the deadly effect of the disease on pine, and especially on young pine stands. Under the same conditions it is very apparent that a pine stand of 5 to 15 years suffers much more from infection than a stand of 30 to 40 years. Will we apply the same protection to both stands, namely, the eradication of Ribes, or are we going to be able to give some assurance that when a stand reaches a certain age, depending on forest conditions, it will mature, and that no further eradication will be necessary, regardless of Ribes conditions. Mr. A. E. Fivaz' paper given at the last blister rust conference at Boston gave some valuable information on this subject and should help to solve this problem.

What effect is blister rust going to have on the future growing of white pine? We have all observed the effect of this disease on young pine reproduction and know that the result is fatal. Very often the owner attaches little or no value to this fact and will not protect the stand. When we consider that in the past this reproduction matured without any protection and know that unless it is free or has been freed of Ribes it will not live, in most cases, does this mean that white pine is going to occupy a decreasing area in the future, due to damage caused by blister rust. I would like to hear the views of our pathologists concerning this feature.

F. H. Rose - Vermont

Edit:- It is probably true that the pine owners will re-eradicate as intimated by Mr. Rose, but the question is will they do it without local leadership.

NOTES FROM AGENT KIMBALL OF MAINE

Town Appropriations

All indications point to another successful season for 1928. Fourteen towns in my district appropriated $2400 for blister rust control work, and there is a possibility that one other town may be added to the above list. Four of the 14 towns made their initial appropriation this year and the one pending will also be new territory.

Here's hoping that the weather man does his share and allots us some good weather this spring, so we will be able to start off with a bang the first of May.

Hemlock Damage Contrasted to Pine Blister Rust

In the vicinity of North Bath there is a hemlock growth which last season was infested by some insect (name of which I do not know) that evidently raised havoc with the trees, causing the needles to turn a reddish brown. I did not see this growth; in fact I did not learn of it until this past winter while conducting my educational work in that vicinity. However, from the facts given me by a number of people, I concluded that this condition was general over this hemlock growth, because apparently the whole lot showed distinct visible evidence of dying and was very noticeable to those passing by.

The thought came to me each time this particular lot was mentioned, while we do not want blister rust to arrive at the stage where a whole pine lot appears to be dead or dying, yet how much easier it would be to deliver the blister rust control message and get town appropriations if we could have just a little of this spirit of anxiety thrust at us, that was evident concerning this hemlock growth; with all due respect to the hemlock.

G. H. Kimball - Maine

INTERVIEW WITH SELECTMEN DEVELOPS INTO A REAL MEETING

At the present time the cooperation and backing received from the Selectmen in my district is very encouraging. Recently I had an appointment to meet the Board of Selectmen in the Town of Foxboro, Mass. It developed that the Board had invited several other interested individuals and the Tree Warden to sit in with them. The local news reporter was also present and a profitable time "was had by all".

E. M. Brockway - Mass.

CIRCULAR CARD TO STIMULATE RIBES ERADICATION BY PINE OWNERS

Feb. 23, 1928.

Dear Pine Owner:

Spring is not far away. The leaves of the Currant and Gooseberry bushes will be showing up in about two months. Plan to get your bushes out of the pine lot when the Blister Rust Worker is in your community and help speed up the work of Blister Rust Control.

Very truly yours,

C. E. BAKER - New York
Agent

AGENT CHARLTON FINDS BLISTER RUST POSTER IN COUNTY JAIL

One of the Federal posters "This Pine Lot Has Been Protected From Blister Rust" has aroused considerable interest among the farmers of Montgomery County, N.Y., who have visited Deputy Sheriff Shean's Office recently. Mr. Shean had posted one of these signs on the bulletin board while waiting to visit a pine lot in which he was interested and which had been protected during the past year. He found that this poster has aroused so much interest and discussion among pine owners that he has left it there. As a result of this, Mr. Shean has already secured the names of quite a number of Montgomery County Pine owners who wish to protect their pine from blister rust.

J. W. Charlton - New York.

Edit: Getting influential men interested in blister rust and capitalizing this interest in the way that Agent Charlton has done could well be followed by others. In other words a sign in the office of a key man is just as good and sometimes better than a sign in the woods.

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I located infection at Hull for the first time yesterday at Star Cottage on Nantasket Avenue. This was on a tree on the lawn. It must have blown over from Hingham and it was a 1917 infection.

E. M. Brockway - Mass.

OBSERVATIONS OF A WEBFOOTER IN THE WILDS OF NEW ENGLAND AND NEW YORK

With two weeks of travel and sightseeing in the Northeast behind me I am fully competent to express my ignorance. I came, I saw-some things, and I conquered some false impressions I had. Realizing that even two whole weeks in new England and New York are not adequate in which to learn all there is to learn about White Pine and Blister Rust, I only wish to give you a few of the impressions of an Oregonian. If I wished to be harsh with you easterners I should tell you the truth about your mountains being merely mounds like those of the Kansas prairie dog and your big white pine trees being about the size of our fair-sized currant bushes on the coast. But to tell such truths would cause you at once to class me with Paul Bunyan, one, I understand, held in disrepute in the East.

The westerner has not yet learned many of the lessons which are the adages of the east. Thousands of square miles of virgin timber look to him today as did the virgin forests of New England, New York and the Lake States to the easterner 75 years ago, i.e. inexhaustable. But all this is old and trite. It brings out the point, however, that a comparison of virgin timber with second growth is not a fair comparison. It will not be many decades before Idaho with all her virgin white pine timber will be in the same class with New England. With this in mind, I should like to make a few comparisons of the western and then eastern or (following the check list, the northern) white pine.

My candid opinion is that taking each in its optimum environment, the western white pine is the superior tree. The lumber is very similar though some claim the northern pine is superior. Not considering isolated trees the western white pine is considerably larger, a point that may be of little importance in the future when we will not permit a tree to reach maturity; it has a much straighter habit, the northern white pine has associated with hardwoods so long that it hardly knows how to behave as a conifer; the annual height and volume growth of the two are similar, the western white pine self-prunes much more quickly than the northern white pine thus giving more clear timber; in spite of the abundance of reproduction of northern white pine I have seen in New England and New York, in spite of the cornfields and pastures it has taken, I believe the western compares very favorably with it in this regard. If we make a comparison of northern white pine with sugar pine the story is different. Many claim the northern white pine has the superior wood. Sugar pine is a much larger tree at maturity and yields much more clear lumber but sugar pine does not stand up to either of the other species in its ability to seed. In fact it is often reluctant to come in after logging and fire. Fortunately, in the Northeast or in Idaho, Oregon, and California we do not need to choose. It is in each case a matter of preserving an indigenous tree.

The western white pine is, however, much more susceptible to the blister rust than the northern. The difference in susceptibility may be due to the fact that the western holds its needles four and often five years while the northern does not hold them commonly more than two years. Branch cankers are much more numerous on the western white pine and in some places trees are killed without a

single canker reaching the main stem. In the West, trunk cankers are not so evident on the large trees at present as they are in the east but a few years will probably reveal many of them.

Sugar pine is not associated with blister rust in the west at present but evidence from Europe where it has been planted indicates that it will act much like western white pine. It holds its needles for three or more years.

New England under snow does not reveal its Ribes secrets to the outsider, but it is safe to say that with your relatively few Ribes species in the east your problem is much simpler than our western problem with our many species. For example Oregon has 29 species of wild Ribes, several of which are very susceptible and we know nothing about the susceptibility of several of the others. Your problem in eradication is solved. Results prove your solution to be correct. A solution to our western problem has been applied in Idaho, Oregon and California but the acid test, "does it work," has not yet been proved. Your problem of control through forest management looks hopeful. Our problem is still a real one, even more so than yours.

This is not supposed to be a treatise on blister rust so let me pass up the subject and give some other observations.

I was delighted with the beauty, due to New England thrift. The white houses, the green shutters, and the well kept yards are a distinct contrast to much of our western carelessness.

The abundance of hardwoods in the east is a striking contrast to the west with its dominance of conifers.

The small mill and the special use plants such as the chair factories, the box factories and the bucket factories are eyeopeners to a westerner. The New England mill would make a furtune on what is left in the western woods to rot or burn.

I In the matter of cooperation our western program is as much behind your eastern as our utilization is behind yours. To me the results accomplished through your blister rust cooperative machinery not only in blister rust control, but in the practice of forestry as well, is a little short of marvelous. No small part of the program of planting 22 million trees in New York last year was fostered by the blister rust men and their work.

Gentlemen, I salute you. When you come west we shall try to do as well by you as you have by me.

L. N. Goodding - Oregon.

PRACTICAL LESSON IN SILVICULTURE AND FOREST PROTECTION GIVEN THE STUDENTS FORESTRY CLUB OF RUTLAND, Vt.

Several weeks ago, I took to the woods with 60 members of the Rutland Students Forestry Club, accompanied by their principal and the 4-H Club agent. After a hike of a mile and a half, we arrived at a woodlot belonging to the Rutland Country Club and adjoining the golf links. On this lot there is a considerable stand of sapling pine, overtopped by hardwoods. I had previously asked permission to lay out a plot here to demonstrate liberation cutting, and as the Country Club wanted the pine for its esthetic value and would make good use of the hardwood in the fireplace at the clubhouse, they very cheerfully cooperated. I had marked the trees to be removed before the boys arrived and after an explanation of the object of the work, the whole 60 of them attacked the plot with axes for the removal of the hardwoods and saws for pruning the lower branches of the pines to be left.

It sounded as though a flock of woodpeckers and a swarm of bees were having a convention. The boys cut the wood into four-foot lengths and made neat piles of the branches. Their principal declared that it looked like a park. I had numbered each tree with an aluminum tag and recorded on data sheets the D.B.H., height, whether or not it was suppressed, weeviled, etc., for future reference. The boys got a real kick out of it and I have planned another trip to the lot to finish the job and permanently mark the boundaries.

This Students Forestry Club is now pretty well acquainted with the white pine blister rust for I had already shown them a large collection of lantern slides depicting various phases of the blister rust and its control. A talk and demonstration of control methods were also given in the field, to most of the members. In the notes taken on the demonstration area, space was provided for recording whether or not the pines were infected with blister rust.

W. E. Bradder - Vermont.

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MAINE JOTTINGS

On April 7 I was in the town of Benton and in a pasture around an old stump found some skunk currants on which the leaf buds were very bright red, and on a few of the buds the green leaves were starting to come through. As yet I have found no gooseberry bushes with leaves coming out. Perhaps that warm rain we had the night of the 7th will start the leaves on the Ribes more.

I have been keeping a sharp outlook for aecia on the pine but so far have been unsuccessful in locating it.

Rust seems to be general in all pine lots in this end of the State. However there does not appear to be any real heavily infected areas.

J. M. White - Maine.

COST OF BLISTER RUST CONTROL IN SOUTHERN GRAFTON AND NORTH SULLIVAN COUNTIES, N.H.

According to 1927 data and figures the following shows how much blister rust control appropriations increase the tax rate of each town:

Town	Amount of Blister Rust Appropriation	Tax rate on $100.00 without Blister Rust Appropriation	Tax rate on $100.00 with Blister Rust Appropriation	Increase in Tax Rate by Blister Rust Appropriation
Lebanon	$1000.00	$ 3.67	$ 3.68	$ .01
Lyme	400.00	3.00	3.04	.04
Dorchester	100.00	2.35	2.38	.03
Grafton	400.00	3.00	3.07	.07
Groton	400.00	2.60	2.68	.08
Alexandria	400.00	3.40	3.49	.09
Ashland	200.00	2.65	2.66	.01
Bristol	500.00	3.04	3.06	.02
Campton	200.00	2.59	2.60	.01
Enfield	200.00	3.87	3.88	.01
Hebron	400.00	2.72	2.79	.07

In interviewing persons a set of similar figures will be found of help in proving that blister rust appropriations do not materially increase the tax rate. I believe that any agent could get the State Tax Commission to send him the figures or rates on their group of towns, provided he write the Commission, giving the amount of the appropriation in each town and stating whether the town did or did not appropriate for blister rust control for the year.

Geo. F. Richardson, Jr. N.H.

Edit:- A number of towns were omitted from the above table.

KEY TO RIBES SPECIES AVAILABLE

Mimeographed copies of the "Key to the Gooseberries and Currants of the Northeastern United States" by Dr. F. V. Coville, are now available at the Washington Office. Copies of this publication were sent the state leaders sometime ago, and it is thought the agents might also find this key helpful.

MAINE TOWNS APPROPRIATE FOR BLISTER RUST CONTROL FOR 1928.

State Leader and Agents	County	No. of Towns	Total Amt.
S. D. Conner	York	3	$ 375.
" " "	Cumberland	9	1450.
G. H. Kimball	Androscoggin	3	500.
" " "	Lincoln	7	1100.
" " "	Kennebec	4	800.
J. M. White	Waldo	3	325.
" " "	Kennebec	4	700.
" " "	Somerset	3	650.
D. S. Curtis	Franklin	4	600.
" " "	Oxford	19	2200.
W. O. Frost	Hancock	1	2000.
		60	10,700

In 1928 there was a 13% gain in the number of towns apropriating funds for blister rust control and a 29% gain in the amounts appropriated over the figures for 1927.

W. O. Frost - Maine

Edit: Mr. Frost is to be congratulated upon the $2000 appropriation made by the town of Bar Harbor. This looks like a record breaker.

Commendation is due the blister rust agents for securing appropriations from so many towns, especially Mr. S. D. Curtis who secured small appropriations from 19 different towns in one county.

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NEWSPAPER EDITORS IN SOUTHEASTERN MASSACHUSETTS AID CAMPAIGN AGAINST THE BLISTER RUST.

During the month of March Agent Brockway personally called on the editors of all the local newspapers in Plymouth, Norfolk, and Bristol counties. As a result of these conferences an article relating to the Massachusetts Order declaring black currants a public nuisance was inserted in each paper. In all, 54 articles were placed in papers in 33 different towns with a combined circulation of 216,750 copies.

DOCTOR MARTIN PLAYS SHERLOCK HOLMES

It has been well known for centuries that "Not all is gold that glitters". We are now learning that "Not all brown pines have blister rust". Agent Clark tells us that so much has been published about the blister disease that people generally assume that nearly all pine ailments such as weevil, ant damage, winter damage, etc. are blister rust. But occasionally Clark gets stuck and here is the latest one on him.

Mr. Clark was scouting in the town of Winchester and up near the northeast corner in a mile or so south of the Winsted-Norfolk road, on the land of Mr. Green he found a stand of pine which looked as though it had something wrong with it. It was not blister rust, but it might be something as bad or worse, so Clark reported to New Haven Experiment Station and Mr. Riley came and investigated. They were not satisfied that there might not be some trouble in store for the pine owners, so on April 5 Mr. Riley brought Dr. J. F. Martin and Mr. G. B. Posey from the Washington Office of Blister Rust Control, Dr. George P. Clinton of the Experiment Station and Mr. Zundel to see the pines. After a thorough examination and after making inquiry from the local residents, the mystery was finally solved, to the relief of all concerned.

Ten years ago there was an ice storm which was of unusual severity in the northwest section of Winchester, and Dr. Martin happened to be in Winsted that day. The damage to the pines is traceable to that storm. The amount of damage had not been so severe as to kill more than part of the stand, but it was the mysterious cause which had the experts worried for fear that widespread additional trouble might be in store.

It is not above suspicion that Mr. Riley was rather canny in bringing along a full crew of lusty helpers, as well as a good spade, for it is reported that his car was stuck on that side road for about an hour that day and that the united efforts of all were required to get backed out on solid ground again.

E. D. C.

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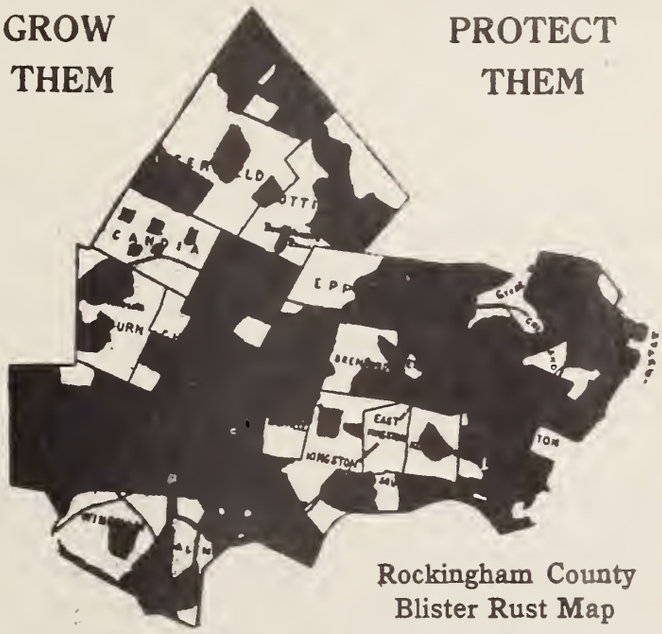
PINE OWNERS ASK FOR ERADICATION WORK ON THEIR LOTS

The goal toward which the agents in New York have been working seems to have been reached by Agent Harpp of Warren county. That goal has been to create such an interest in blister rust control that the pine owners would be asking for eradication on their lots instead of the agent having to make a long series of follow-up calls to secure eradication. Harpp reports that pine owners whom he had not approached for eradication were asking him to put a crew on their pine lot. Warren county is beginning to look like a Blister Rust Heaven to Harpp.

PINES PAY

GROW THEM

PROTECT THEM



Rockingham County
Blister Rust Map

Shaded areas indicate protected land. All other land is unprotected

Dead and dying pines are present in every town in the County. The rust kills them.

Thousands of pines infected with rust were noted during 1927. Those pines will die.

The rust on pines came from the leaves of gooseberry and currant bushes.

Nearly half a million bushes were destroyed in Rockingham County in 1927 and 31,557 acres of land were protected.

For additional information or woodlot inspection, address

LEWIS C. SWAIN
Blister Rust Control Agent
EXETER, N. H.

The above post card with a map of Rockingham County, N. H., embodies a relatively new idea by showing graphically where blister rust protection has been given. Every pine owner is interested in his own county and this map showing the extent of white pine protection should be of interest. Mr. Swain used the same map and description as a front page article in the Rockingham County Farmer.

RHODE ISLAND NOTES

Lantern Slide Lectures

Lantern slide talks on blister rust control have been given this month at the Chepachet Grange, before a botany class at the Rhode Island College of Education, before a meeting of the Bristol County Farmers Association and at a meeting of the Lion Club of Newport. A total of 165 people attended these meetings.

Aecia Observed April 12.

The first fruiting of a blister rust canker was noticed on April 12 near Slatersville in an old pine infection center. This canker, located on a pine limb, was just commencing to fruit around the edges of last season's fruiting area where the bark was peeled off in collecting aeciospores for the Office of Forest Pathology.

A. W. Hurford - Rhode Island

PINE INFECTION FOUND IN SEVERAL ADDITIONAL TOWNS IN SOUTHERN MASS.

Pine infection has been recently found for the first time in the towns of Braintree, Millis, Wellesley, Westwood, and Quincy, in Norfolk county. With the addition of these towns, disease on pine has now been definitely located in all of the 28 towns in the county. The disease has also been found in 27 towns in Plymouth county and in all towns in Bristol county.

E. M. Brockway - Mass.

DISTINCTIVE PLANTATION STARTED AT FRANCONIA, N.H.

A rather distinctive plantation has been started in Franconia on land owned by Mr. Robert Peckett, Proprietor of "Pecketts on Sugar Hill". Mr. Peckett has purchased 20 thousand trees, mostly four year olds, comprising seven species of evergreen, namely, white pine, red pine, Scotch pine, fir balsam, Douglas fir, white spruce, and Norway spruce. These will be set out in rows of eight by eight with the white spruce and fir balsam in the center of the squares. The white spruce and balsam fir will be taken out in a few years and used as Christmas trees. Space has been allotted for roads around and through the plantation so autos can travel about. These roads will also serve as fire lines in the event of a fire. After the planting has been done, the currants and gooseberries will be removed from the surrounding area to prevent the spread of the white pine blister rust.

Thos. L. Kane - New Hampshire.

PROMPT ERADICATION OF CULTIVATED BLACK CURRANTS RETARDS THE SPREAD OF WHITE PINE BLISTER RUST.

White Pine blister rust is a serious fungous disease which was introduced into North America from Europe about 1900 and is now causing severe damage to unprotected white pine in regions where the rust is abundant. It can not spread directly from one pine to another. From diseased pines it spreads to currant and gooseberry plants and then back to the pines. Hence, the disease can be controlled by destroying all currant and gooseberry plants within infecting range of white pines. This distance varies locally, but under ordinary forest conditions, 900 feet gives adequate protection to the pine except where the European or cultivated black currant (*Ribes nigrum* L.) is present.

As its name indicates, the cultivated black currant is not a native plant. It was introduced from Europe and while grown on a small scale in some sections, the market demands for the fruit are limited and in general it is not of much commercial importance in this country. On the other hand, its prominence in the dissemination of white pine blister rust is so great that the plant is considered a public nuisance. The cultivated black currant should not be confused with the native wild black currant, *R. americanum* Mill., which is commonly found in swampy areas. The wild black currant is much less susceptible to blister rust and compared to the cultivated black currant is relatively ineffective in establishing the disease.

The cultivated black currant is more susceptible to blister rust than other currants and gooseberries. It becomes infected at distances up to 150 miles or more from diseased pines and starts new centers of infection in disease-free areas. From these centers the rust spreads to other currants and gooseberries in the locality and from the infected bushes to nearby white pines. In this way new areas of pine infection are established from which the disease again spreads to distant cultivated black currants. Field conditions have uniformly shown that cultivated black currants are largely responsible for the wide distribution of the disease in this country. Fortunately, these plants have not escaped from cultivation and hence have not become established in our forests. Since they are confined to gardens, it is not difficult to get rid of them if owners will cooperate in their eradication.

Such action will retard the spread of the disease and help protect the white pine. Several States have eradicated the cultivated black currant as a necessary white pine protective measure and others are undertaking this work. The cultivated black currant is an undesirable plant because its presence in a region is always a serious menace to white pine. Compared with the pine, its value and economic importance is negligible. Therefore, the United States Department of Agriculture is opposed to the growing of this plant in the United States and recommends its elimination in States where white pines are important forest trees.

J. F. Martin.

NOTE: If the state leaders or agents can use this article by Dr. Martin in quantity, the Washington Office will be glad to supply it.

TWO SCORE WOODLOT OWNERS VISIT BADLY INFECTED AREA AT MOULTONBORO, N.H.

A forestry meeting was held in Moultonboro March 1 through the co-operation of the extension forester Mr. K. E. Barraclough, the farm bureau, and the blister rust control agent. Twenty-three woodlot owners, including two selectmen, were on hand.

Methods for handling mixtures of white pine and gray birch were discussed during the first part of the afternoon. The group then walked to another part of the woodlot where a large number of small white pines were dead and dying from blister rust. Skunk currants pulled two years ago caused the damage and were yet to be seen hanging on bushes. It was an excellent opportunity to show the result of the disease.

One noticeable feature, commented upon by several, was the rodent damage. Practically all of the cankers had the bark chewed off, some of the trees being entirely girdled. This rodent damage provides a new method of locating infections. Three of the men present said they had seen the injury but had not connected it with blister rust.

S. H. Boomer - New Hampshire.

QUARANTINES

CANADA RESCINDS REGULATION CONCERNING CULTIVATED BLACK CURRANTS

On February 16, 1928, the Canadian Government through the Governor-General in Council rescinded the Regulation (No. 8) of April 20, 1927, "Restricting the Sale of all species and Varieties of Black Currants in Canada." This regulation read as follows:-

"On and after June, 1927, it shall be illegal to sell or otherwise dispose of for planting or other purposes all species of black currants, including horticultural and standard commercial varieties thereof, within and throughout the Dominion of Canada, except within the provinces of Alberta, Manitoba and Saskatchewan and the counties of Brant, Bruce, Dufferin, Elgin, Essex, Grey, Haldimand, Halton, Huron, Kent, Lambton, Lincoln, Middlesex, Norfolk, Oxford, Peel, Perth, Waterloo, Welland, Wellington, Wentworth and York in the Province of Ontario."

The reason for rescinding the former regulation is summed up as follows:

"And whereas the Minister of Agriculture reports that, in view of the protests of the horticultural interests and the lack of interest in the white pine blister rust situation which has been shown by the provincial forest services and the lumber companies, it is considered desirable that the Regulation in question be rescinded."

NOTICE OF RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE DEPARTMENT OF AGRICULTURE FOR THE SUPPRESSION AND CONTROL OF THE WHITE PINE BLISTER RUST

Whereas, a dangerous and injurious disease known as the white pine blister rust, Cronartium ribicola, Fischer, is present in this state, and Whereas the suppression and control of this disease is being prosecuted within the state by eradicating wild and cultivated currants and gooseberries, the alternate host plant of the disease;

Now, therefore, I, Harry R. Lewis, Commissioner of Agriculture of the State of Rhode Island, by virtue of the authority in me vested by chapter 286 of the General Laws Revision of 1923, do hereby order and declare, that, in order to suppress and control the white pine blister rust in Rhode Island, the following rules and regulations are established, to wit:-

1. The transportation within the State of Rhode Island or the importation of five-leafed pines or plants of the genus Ribes is hereby prohibited except as permitted by State and Federal Laws and Regulations. Application for permit to import or transport should be sent to the State Department of Agriculture, State House, Providence, Rhode Island.

2. Five-leaf pines and plants of the genus Ribes shall be planted in Rhode Island only after a permit for planting has been obtained from the State Department of Agriculture.

3. The cultivated black currant, (Ribes Nigrum L.) or any variety of this species is hereby declared to be a public nuisance and it shall be unlawful for any person to possess, transport, plant, propagate, sell or offer for sale, plants, roots, scions, seeds or cuttings of these plants in the State of Rhode Island. Such plants, roots, scions, seeds or cuttings may be destroyed by the State Commissioner of Agriculture or his agents. The planting of flowering currants (Ribes aureum and Ribes odoratum) anywhere in the state is also prohibited. (This section supersedes or extends Section 2 of the Blister Rust Rules and Regulations effective April 8, 1919, which reads as follows: The planting of black currants or flowering currants will not be permitted anywhere in the state).

4. The following towns or parts of towns in the State of Rhode Island have been set aside as white pine blister rust control areas:-Burrillville except for the closely built up districts (as defined by Section I, definition 16 of the Motor Vehicle Laws of Rhode Island, published in 1927) in the villages of Pascoag and Harrisville, that part of North Smithfield lying west of the city line of Woonsocket and the state highway known as the Farnum Pike (R-104), Glocester, Foster, Scituate, Coventry, West Greenwich, Goddard Memorial Park in the town of Warwick and that part of Exeter lying west of the state highway known as Nooseneck Hill Road (R-1 A) and the possession and planting of all plants, roots, scions, seeds or cuttings of the genus Ribes in these areas is prohibited. (See footnote)

5. Any person violating provisions of these regulations shall be fined not exceeding one hundred dollars as provided in section 6, chapter 286 of the Rhode Island General Laws, Revision of 1923.

6. The above rules and regulations are hereby adopted and shall be effective on and after April 1st, 1928. These rules and regulations shall supersede those previously issued, except as provided for in Regulation 3.

RHODE ISLAND STATE DEPARTMENT OF AGRICULTURE,
Harry R. Lewis, Commissioner.

NOTE: Outside of the areas mentioned in section 4 above, any stands of five-leafed pines comprising one acre or more in extent may also be declared white pine blister rust control areas and possession and planting of all plants, roots, scions, seeds or cuttings of the genus Ribes within 900 feet of such areas will be prohibited if in the discretion of the State Commissioner of Agriculture the safeguarding of the white pine stand is more important than continued permission to grow Ribes within said area.

Nurseries growing five-leafed pine as nursery stock may safeguard this stock by applying to the State Department of Agriculture to have the nursery set aside as a white pine blister rust control area. Each such application must be considered on its own merits and no general regulation covering all cases can be issued.

March 15, 1928.

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STARLINGS, WOOLY APHIS, WEEVIL ON WHITE PINE AT MILLBROOK, N. Y.

Near Millbrook in Dutchess county, may be found a white pine planting badly damaged by white pine weevil. It also offers other interesting features not common to white pine in New York State.

This stand of pine, 10 acres or more in extent, has become at irregular intervals the roosting place for literally millions of Starlings. Six or seven years ago there seemed to be the greatest influx of birds; then again in the late summer and winter of 1926, up to about the first of January. Last winter none came. Mr. Aspbury, the Superintendent, thinks that perhaps the Goshawk drove them away after January, since considerable numbers of them were seen in the vicinity, particularly around this planting. This planting is also badly infested with wooly aphis.

With the starlings, wooly aphis, white pine weevil, to say nothing about blister rust, it would seem that this piece of pine had its fair share of ills. But does not this illustrate that in making a planting it pays to mix up the species as much as is practical. It is true that a red pine or spruce may have been susceptible to injury by birds but they would have stood a better show against the aphis at least and also the weevil attack.

H. G. Strait - New York.

COMPTROLLER'S DECISIONS

Specifications for the purchase of motor vehicles should be drawn not by the designation of a particular make, or with reference to the mechanical construction of a particular make, but to show only such details as to construction and performance requirements as can satisfactorily be shown to be necessary to meet the needs of the service.

The designation of a certain type of transmission, such as planetary, in the specifications for the purchase of a motor truck intended to be used for ordinary light hauling is not authorized.

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Employees traveling between Washington, D. C. and Baltimore, Md., on official business are required generally to use the cheapest mode of transportation available. Where, however, by using the more expensive mode of transportation, i. e., steam railroad, the time necessarily absent from headquarters is confined between the hours of 8 a. m. and 6 p. m. entitling the traveler to no subsistence expenses and it is shown that travel by the cheaper electric road would have necessitated absence before 8 a. m. or after 6 p. m. entailing the payment of subsistence expenses or per diem, the use of the steam railroad is authorized without further evidence of the actual saving in time or other benefit accruing to the Government.

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The allowance of mileage to an employee of the Department of Agriculture for the use of his personally owned automobile on official travel, as authorized by the act of May 11, 1926, 44 Stat. 530, is a commutation of the expense of operating such automobile and precludes any additional allowance on an actual-expense basis for repairs thereto incident to such travel.

The provision in the act of March 4, 1913, 37 Stat. 843, authorizing reimbursement for horses, equipment, etc., lost, damaged, or destroyed while being used for official business in the field work of the Forest Service, is not applicable to damage to the automobile of an employee in the Office of the Solicitor of the Department of Agriculture sustained while the employee was traveling on business incident to the work of the Bureau of Animal Industry.

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Books which require printing, binding, or ruling operations for their manufacture are blank books within the meaning of the act of March 1, 1919, requiring their procurement from the Government Printing Office, and should not be contracted for on the general supply schedule.

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Employees of the United States who appear before United States commissioners as witnesses for the Government are entitled to their regular pay during the time they are away from their regular duties on account of said appearance without having the absence charged to their annual leave.

Comptroller's Decisions Contd.

UNITED STATES DEPARTMENT OF AGRICULTURE
Office of the Solicitor
Washington, D. C.

April 3, 1928.

Dr. William A. Taylor,

Chief, Bureau of Plant Industry.

Dear Dr. Taylor:

I have received your letter of March 26, 1928, relative to purchasing, at the various field stations, serum to counteract poison from snake bites.

In numerous decisions of the Comptroller of the Treasury he has held that procurement of medical supplies or the attendance of a physician for employees is unauthorized, as it would be considered an addition to the compensation paid the employee, 3 Comp. Dec. 52; 12 Comp. Dec. 28; 6 Comp. Dec. 955. I find, however, that in a decision to the Department of Agriculture dated August 26, 1916, it was held that a miscellaneous lot of medical supplies, consisting of bandages and simple medicines, and also a surgical instrument could be purchased for the Department of Agriculture emergency room. A copy of this decision is enclosed, herewith.

The latest decision on this subject, 24 Comp. Dec. 37, was to the Interior Department, relative to the furnishing of medical relief for employees in the new Department of Interior building. In this decision the Comptroller stated: "That there had been a number of decisions by the Comptroller's office negativing the procurement of medicine, etc., for the use of employees, for the general reason that it would increase the compensation of the employee. Where the furnishing of the medical relief would be continuous this is probably correct, but where the purpose is for emergency use and for the instant time until the afflicted person is forthwith removed, I can not see that furnishing medicine, etc., is in the nature of increased compensation; at best it would be trivial and too remote to control the legality of the expenditure. **********It is to be understood that the views herein expressed do not authorize procuring personal services as a part of medical attention."

In view of the foregoing, it would appear that snake bite serum proposed to be purchased by your office is an emergency purchase, not intended for any particular person, but procured for the purpose of having some on hand in the event that anyone or more employees happened to be in need of same. In the case presented by you it would be impossible, under many circumstances, to wait until the employee could be taken to a physician, as a great many of the places at which the poison from snake bites would be likely to occur are isolated and far removed from medical assistance, and to delay until medical assistance could be reached might result fatally.

Accordingly, I am of the opinion that the purchase of the kind requested in your memorandum of March 26, 1928, may properly be made.

Very truly yours,
(Signed) C. W. BOYLE - Assistant Solicitor.

Enclosure.

OBSERVATIONS IN THE LOWER HUDSON VALLEY

New York City Believes in Planting Pine

The forest plantings of New York City in Westchester County are outstanding examples of what reforesting idle lands will do in a period of 20 years. The city owns several natural lakes and has created several more large artificial lakes in the county. It owns the land back from the water line, an average of about 200 feet, with the exception of Kensico Reservoir which averages about 1000 feet. In a few places hardwood covers the border strip but where the land was open the city was endeavored to make a cover by reforesting with evergreens. Along miles of shore line, spruce and pines are in evidence. The contrast with the surrounding forest type is very striking, since no evergreen can be seen other than the plantings. After viewing these miles of trees apparently out of their natural environment and yet making such rapid growth even the most skeptical person would agree that reforestation is feasible and practical.

At Kensico Reservoir white pines have attained a height of nearly 35 feet at 18 years of age and annual growths of 2½ to 3 feet can be found. Red and Scotch pine and Norway spruce are all doing exceptionally well there. The picture that one gets of the Kensico plantings is not to be forgotten soon. It is a wonderful example of what the Conservation Department is trying to tell every land owner to do with his waste land. The wonderful roads by these plantings make it possible for thousands of motorists to see them, and without doubt many a landowner has been quickened by this sight and straightway ordered trees for some of his barren acres. Now the city is starting to prune the lower branches. This will eliminate danger of fires to quite an extent. The branches are taken off as high as a man's head, and in some instances higher. The limbs are taken out and burned, making a very neat looking job.

H. G. Strait - New York.

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PRUNING WHITE PINE

Subject of New Bulletin by Massachusetts Forestry Association and the Harvard Forest

A new bulletin on pruning white pine is being issued by the Massachusetts Forestry Association and the Harvard Forest. Mr. Harris A. Reynolds Secretary of the Association, states that this publication represents a year's work by both organizations and contains the best data on pruning that has appeared in this country. Copies may be obtained from Mr. Reynolds, 4 Joy Street, Boston, Mass., at 25 cents each.

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EARLY AECIAL INFECTION IN MASSACHUSETTS

Under date of April 16, Agent Brockway of Plymouth County reports that aecia have been out for about three days. He also states that at Pembroke Arms aecia were very hard to find as the squirrels have cleaned up every tree.

SOME DATA ON THE VALUE AND IMPORTANCE OF WESTERN WHITE PINE

Table No. I

Present Stand of Commercial Five-Needled Pines
Western United States

Location	Species	Amount[1]	Value
*Western States	White Pine	22 billion bd. ft.	$165,000,000.00
California and Oregon	Sugar "	35 billion bd. ft.	157,000,000.00

*Montana, Idaho, Washington, Oregon and California.

[1]Estimated by U. S. Forest Service, extracts from Statistics and Report compiled for the "Budget" for the fiscal year 1927.

In addition to the stands of commercial timber listed above, there is a large acreage of second growth and young reproduction, which if protected, will become the forest crop of the future. The perpetuation of white pine is considered of paramount importance because of its rapid growth, high yield, excellent wood and adaptability to forest management. Of the 53 wood-using industries in the United States, 45 use more or less western white pine and 21 use sugar pine.

There are 66 national forests on which western white and sugar pine grow in more or less abundance. Federal holdings contain 25% of the western white pine stumpage, state holdings 15% and private holdings 60%. The Federal government also owns 40% of the sugar pine stumpage and private interests 60%. No species can replace these two woods in quality and value within their regions of optimum growth.

Amounts and Values of White and Sugar Pine Used Annually

The following table, which is compiled from data obtained from the Forest Service and the Bureau of Census, shows the amounts and values of western white and sugar pine cut in the western states from 1920 to 1923, inclusive:

TABLE II

Year	M Bd. Ft. White Pine Cut	M Bd. Ft. Sugar Pine Cut	M. Bd. Ft. of Both
1920	338,000	146,000	484,000
1921	276,000	134,000	410,000
1922	411,000	194,000	605,000
1923	463,000	229,000	692,000
Average	372,000	176,000	548,000

The white pine lumber had an average value in 1922 of $40.17 and sugar pine $43.78, f. o. b., at the mills.

The figures in the preceding tables represent only stumpage and lumber values. White pine stumpage and mill values have been constantly increasing. In addition to the value of the timber itself the value of such an industry to the country is very great. Every thousand board feet of lumber which is cut and manufactured means that an average of from $15 to $30 is spent in the community in payrolls and supplies. This means that each year, in the white pine and sugar pine regions of the West, in the logging and manufacture of 548,000,000 board feet of this lumber from $8,220,000 to $16,440,000 are disbursed in the form of wages to the resident population and for supplies to the merchants.

On the basis of these figures what will be the result of severe and widespred damage to western white and sugar pine? In the first place it will mean a loss to the western states of a lumber industry which cuts nearly $15,000,000 worth of white pine lumber and nearly $8,000,000 worth of sugar pine lumber, annually. In the second place it will mean the loss of from $8,000,000 to $16,000,000 spent annually in these states by the logging and milling industries. Lastly, it will mean the loss to Idaho of its principal and most valuable commercial tree species and a resulting loss to the wood-using industries which at present employ 60% of the industrial population of the State. To California and southern Oregon it will mean the loss of their largest and most magnificent pines, and of a tree which is as essentially typical of that region as the redwood.

Species now considered inferior will no doubt rise in value and to some extent replace the white pines, but even the most conservative forecast of the results if blister rust is not restrained indicates losses far greater than the cost of applying local control in the principal pine growing sections.

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Extract from J. L. Bedwell's article "The Control of White Pine Blister Rust in the West". in The Univ. of Wash. Forest Club Quarterly. Feb. 1928.

PODSOL SOIL - WHAT IT IS.

The term podsol soil has come to the attention of the Editor only within the last few months, but it seems to have been used in Europe for several years by the soil specialists. It has an interest, I believe, to all engaged in forestry work, but especially to those engaged in the protection of a coniferous stand, the white pine, which in pure stands on sandy loam soils forms podsolized soils.

In a recent bulletin by Emil Kekich of the U. S. Dept of Commerce on "Forestry in Sweden" (1927) there appears this statement, "A large part of Sweden's forest soil consists of a layer of raw humus, owing to the cold climate and the high humidity, the humus giving rise to what soil technicians call podsol soil, a layer of leached soil just under the raw humus which tends to retard reproduction".

A podsol soil seems therefore to be inimical to the best production of forest crops. In Sweden according to the above mentioned author on these podsol soils, "two chief methods of reproduction are used, namely, leaving seed trees and getting rid of the humus or cutting the stand clean and sowing or planting. A stand is opened up and most of the trees cut (only the best remaining, numbering up to 40 or more per acre) to bring in light, thus raising the temperature to break down the raw humus and causing good conditions of growth for the seed. In the northern regions, however, where the sun is not sufficiently warm to break down the raw humus, light burning, carefully supervised, is used."

Mr. R. T. Fisher, Director of the Harvard Forest at Petersham, Mass. in an article in Ecology* on "Soil Changes and Silviculture on the Harvard Forest" discusses the podsolized soils formed beneath a pure pine stand at Petersham. He writes: "In this experience with soil changes on the Harvard Forest, there is a lesson for silviculture. Podsolized soil, except possibly in northern regions where it may be unavoidable, indicates soil deterioration and relatively poor growing conditions. It develops commonly in pure white pine stands, which fall off in growth and health at comparatively short rotations. The mull soil, on the other hand, is fertile and active. It develops rapidly in mixed stands, which have long been recognized, even by lumber operators, to produce the largest and best quality of softwood timber. The natural tendencies of the present transition types in central New England are toward reversion to mixture of species, which can usually be more cheaply established than pure stands of softwood. There are thus strong biological as well as economic reasons against the maintenance of pure white pine as a permanent type. Conversely, the formation of mixed types means good silviculture and sound business.

R. G. Pierce

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*Ecology Vol IX No. 1, Jan. 1928.

PROTECTION FROM POISON IVY

POISON IVY, the bane of the vacationist's existence, is with us again. Every motor trip, every picnic, every hike through the woods is apt to be followed by a blistered, red, intolerably itching casualty, or at least will have the best edge taken off its pleasure by the nervous anticipation that such ill consequences may follow a few hours after brushing against some seemingly innocent vine or bush. Remedies by the humdreds are recommended by doctors, by druggists, by old-fashioned housewives. Some of them work, some of them just serve to keep the patient in as cheerful a frame of mind as possible until the afflicted place gets well by itself. The handling of ivy poisoning, and of its kindred ailments oak and sumac poisoning, is still in more or less chaotic condition.

Scientific order, however, is being brought out of it by the efforts of botanists, chemists and physicians, and now there are a few standard remedies, and what is even better, standard preventives, that anybody can have his corner druggist mix up in a few minutes. There is nothing "patent" or proprietary about them; they are all old familiar chemicals, and they don't cost much.

The best remedy is axiomatically one that destroys the cause of the ailment and it is for this reason that Dr. James F. Couch, of the U. S. Department of Agriculture, expert on poisonous plants recommends the use of a solution of permanganate of potash to stop the itching, blistering irritation that follows contact with poison ivy, poison oak or poison sumac. Five per cent of the compound in water is all the prescription your druggist will need. Bathe the afflicted skin freely with this solution, swabbing it on with a bit of cotton or soft cloth, and the poison will be oxidized and destroyed. This treatment leaves a brown stain on the skin, which can easily be removed in any one of a number of ways. A one per cent solution of oxalic acid, Dr. Couch says, is the quickest means. But oxalic acid is a poison, so that if you are afraid of children getting hold of it you may use instead a one per cent solution of sodium bisulphite, or even just plain soap and water, though the latter is a bit slow in taking off the stain. If the skin has been very much broken by scratching or otherwise and is raw, the oxalic acid will cause a temporary stinging and soap and water is preferable for removing stains from such sensitive surfaces. If the skin is very tender the solution of potassium permanganate may be diluted with water before using.

The permanganate treatment is recommended only as a remedy for poisoning that has already taken place. Persons who know that they are likely to be poisoned may prevent the plant from harming them with a wash devised by Dr. James B. McNair of the Field Museum, Chicago. This consists of a five per cent solution of ferric chloride in a fifty-fifty mixture of water and glycerin. This is to be washed on all exposed parts of the skin and allowed to dry there, before going where the dangerous weeds grow. The iron in the chemical combines with the poisonous principle of the ivy and changes it into a harmless, non-poisonous compound.

THE SCIENCE MONTHLY
Sept. 1927.

LUMBER MILL MAKES WAY FOR BALDWIN DANCE HALL

WEST BALDWIN, ME. March 22. Where once whined the saws of a mill through pine logs soon will be heard the snort of saxophones and the boom of drums.

The lumber mill, at one time owned and operated by Nathan and Royal Sanborn is being razed and the lumber moved to another place where Edward Harris is reconstructing the mill into a novel dance pavillion.

Portland (Me.) Press Herald.

Once more the knell of the parting forest is sounding as the Sanborn mill takes on a new role. Conservative lumbering and blister rust control would have thwarted this change and have left a lasting monument to the population of West Baldwin. Not only a monument but an unfailing source of revenue, for it is a proved maxim, "Pines Pay". That is, protected pines, for no matter how sturdy a growth, nor how healthy a stand it is not immune if that insidious killer of pines, the blister rust, is present. The rust knows not nor heeds the boundaries of state but travels far and wide on its mission of destruction.

As Joyce Kilmer has so aptly said "Only God can make a tree". But we can protect that tree after He has made it for use, and who can tell but that on the 22nd of March 1978 our children will read:

"Dance Hall makes way for Lumber Mill. Where lately sounded the boom of drums and the moan of saxophones soon will be heard the screetch of the winch and the buzz of the saw. The dance hall, at one time owned and operated by Edward Harris is being razed and the place is being reconstructed into a lumber mill."

J. M. Palmer - Wash. Office

PUBLICATIONS

Blister Rust

Bedwell, J. L. The Control of White Pine Blister Rust in the West. The University of Washington Forest Club Quarterly. Vol. VI No. 2, 3, 4. February, 1928.

Newman, L. E. The Story of New Hampshire White Pine. New Hampshire Forests. Vol. V, No. 11, March, 1928. p. 1-3.
NOTE: The three cuts which were used by Mr. Newman, showing (1) aecial blisters enlarged, (2) the two host plants, Pines and Ribes, and (3) young pine badly infected with blister rust, are available at the Washington Office.

AMONG OURSELVES

M. G. Dufrenoy, French Plant Pathologist and co-worker with M. Etienne Foex, visited the Washington Office March 26.

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In the Agriculture Tournament at Washington, April 12, Blister Rust Team #1 rolled a 1650 set. Endersbee's "Pine Blisters" take notice. Mary Louise Reiff was high "man" for Blister Rust Team #2 with a 354 set. Mrs. Reiff's score of 132 was high game for the ladies in the tournament.

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Mr. C. M. Scherer, Kent, Ohio, Davey Tree Expert visited the Washington Office on March 31.

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Agent C. E. Baker's headquarters have been changed from Saratoga Spgs., N. Y., to Albany, effective April 15.

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G. Stanley Doore's headquarters have been changed from Boston, Mass. to Greenfield. The change is effective April 10.

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Agent L. C. Swain attended a meeting at Hampton Falls during March and gave a stereopticon talk before an audience of 44 people.

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Agent Harpp reports that one of the most successful meetings he has ever held was one for the Boy Scouts of Thurman and Chestertown. After a talk by Harpp, in conjuntion with pictures, the meeting was opened for questions and the boys had plenty of them.

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C. E. Baker, formerly Agent in Saratoga county, has been holding a series of meetings recently with Boy Scouts and school children. While all the meetings were quite successful, the one held for the schools of Corinth seems to have secured some action. As a result of this meeting the schools of Corinth are negotiating for the purchase of 250 acres of land for a site on which to establish a school forest. This will be the largest school forest in New York if the purchase is made.

SUPPLEMENT TO

THE BLISTER RUST NEWS

Vol. 12, No. 4, April,1928.

C O N T E N T S

A SUMMARY OF EDUCATIONAL MATERIAL ON BLISTER RUST CONTROL AND ALLIED SUBJECTS AVAILABLE AT THE WASHINGTON OFFICE

by Roy G. Pierce

* * *

PUBLICATIONS ON BLISTER RUST, RIBES, AND WHITE PINE

Blister Rust		Copies Available
Bulletin 1186.	White Pine Blister Rust in Western Europe.	1600
Circular 177.	Treatment of Ornamental White Pines Infected with Blister Rust.	10
Circular 226.	White Pine Blister Rust in the Western United States.	110
Miscellaneous Circular 40.	White Pine is Profitable if Protected from Blister Rust.	20
Miscellaneous Pub. 22. Eastern Edition) Protect White Pine From " " 23. Western ") Blister Rust. These publications represent the Revision of Misc. Circ. 40. (Being Printed)		
Farmers' Bulletin 1398.	Currants and Gooseberries. Their Culture and Relation to White Pine Blister Rust. This publication is being revised.	25
J. A. R. Reprint.	Survey of Blister Rust Infection on Pines at Kittery Point, Me., and the Effect of Ribes Eradication in Controlling the Disease, by G.B.Posey	400
1926 Yearbook Separate 938.	Black Currant is Nurse of Blister Rust. Reprint being requested.	
Bulletin 2.	American Plant Pest Comm. Report on White Pine Blister Rust Control, 1918.	130
Bulletin 4.	American Plant Pest Comm. Report on White Pine Blister Rust Control, 1919.	120
Bulletin of the Greens Section of the U. S. Golf Association, pp. 144-147-148, June, 1924.		5

Blister Rust (Continued) Copies

Massachusetts Department of Agriculture Publication #132, "Destroy Black Currants" 78

Pennsylvania Plant for Conducting White Pine Blister Rust Survey in the Schools. 20

Mimeographed Material

8th Annual Rept. Blister Rust Conference.	February, 1923.	32
9th " " " " "	February, 1924	29
10th " " " " "	February, 1925	28
11th " " " " "	December, 1925	11
12th " " " " "	December, 1926	34
13th " " " " "	November, 1927	46

Blister Rust as Applied to Nurseries. by S. B. Detwiler. March 15, 1927. 235

Blister Rust Damage to White Pine By Age Classes. By G. B. Posey, May 23, 1925. 12

Blister Rust News. Extra copies from 1924 to date, with indexes.

Blister Rust Reminder Card (BR-46) to be sent to pine owners calling their attention to the need for re-examination of the land for any missed bushes. 400

Status of White Pine Blister Rust Control in 1920-1921. By S. B. Detwiler. 13

Status of White Pine Blister Rust Control in 1921-1922. 19

Status of White Pine Blister Rust Control in the United States in 1923. By G. B. Posey and J. F. Martin. 34

The Results of Inoculating Pinus strobus With the Sporidia of Cronartium Ribicola. J.A.R. Separate. Mar. 15, 1927. 75

The White Pine Blister Rust Situation in Michigan. Feb. 1, 1926. 6

Blister Rust Quarantine

Charts I and II. Digest of Regulations Under Quarantine 63.

Dr. W. A. Taylor's Letter of Sept. 25, 1926, explaining Blister Rust Quarantine 63.

Blister Rust Quarantine (Continued)	Copies
Notice of Quarantine 63, and Amendment No. 1 to Quarantine 63.	
Extension	
A Cycle Showing Means and Agencies for Promoting the General use of a Practice of Proven Value with Special Reference to Continuity and Repetition of Thought.	24
Extension Work in Farm Forestry in New York State.	31
Helpful Hints in Newswriting.	10
Reaching the Public With the Printed Word.	14
Miscellaneous	
Facts About Snakes. 9-page mimeographed article by Bureau of Biological Survey.	21
Poisonous Snakes of the United States. 13-page mimeographed article by the Bureau of Biological Survey.	24
Ribes	
Key to Ribes of Northeastern United States by Dr. F. V. Coville.	52
Massachusetts Manual For Field Men, with photos showing the leaves of currants and gooseberries. 1926 Edition.	4
1927 Edition.	25
Pennsylvania School Card, showing currant and gooseberry leaves infected with the blister rust.	2,000
Prompt Eradication of Cultivated Black Currants Retards the Spread of White Pine Blister Rust. by J. F. Martin, March 14, 1928. (mimeographed)	150
Ribes of Oregon (1st Edition) 1923	4
(2nd Edition) 1926	4
Ribes of the Inland Empire.	7
Ribes of the Sugar Pine and Western White Pine Region of Calif.	5
Ribes of Washington.	9
Ribes Substitutes	
Edible Fruits Borne on Many Ornamental Shrubs.	91

White Pine | Copies

Forest Practice as Influenced by the White Pine Blister Rust.	36
Less Serious Diseases of White Pine.	26
Notes on Release of White Pine in Harvard Forest, Petersham, Mass.	48
Observation on the Management of White Pine with Special Reference to Reproduction Methods Used on the Harvard Forest at Petersham, Mass.	59
The Management of Second Growth White Pine in Central New England.	32
The Relation of Gray Birch to the Regeneration of White Pine.	10
The Sustained Yield in Certain Forest Localities in Massachusetts by H. O. Cook.	30
The White Pine Blight.	45
White Pine Insects.	70

CUTS FOR ILLUSTRATIVE PURPOSES

1. From Misc. Circular 40:
   size of each (Fig. 6. Photo 2512, Large pine killed by blister rust.
   3"x 4 1/8" (Fig. 7. " 310, Wild gooseberry bush growing among white pine)
   (Fig. 8. Photo 2338, Blister rust crew uprooting wild Ribes)
   (Fig. 1. Photo 984, Maturing pine crop on untillable land).

2. From Mr. Detwiler's article "Saving The White Pine" in Review of Reviews.
   size of each (Photo 484, Aecia enlarged).
   2½ x 3 1/4" (" 175, Two host plants).
   (" 1862, Young Pine heavily infected with blister rust).

3. From Misc. Circ. 177 "Treatment of Ornamental White Pine for the Blister Rust".
   3 cuts (Fig. 5, Typical canker showing blisters and dead irregularly cracked bark where blisters were formed in previous years.
   2½ x 6 1/4"
   4 cuts (Fig. 6.
   1 3/16 x 4 1/4" (An old blister-rust canker with typical rough irregularly cracked bark).
   2 cuts
   4 1/4 x 5 3/4" (Fig. 8, Branch infection on a 12-year old pine tree).

Cuts continued.

size of each (Fig. 9, Blister rust infection on white pine, showing how
4 1/4 x 5" infected limb should be removed). 4 cuts.
size of each (Fig. 11, Crew eradicating wild currant and gooseberry
4 1/4 x 4 1/4" bushes to protect near-by white-pine stands from further damage by blister rust). 2 cuts.

4. From four-page colored leaflet "The White Pine Blister Rust, What it is, Where it grows, How it Spreads, What you should do about it". Also appearing as Fig. 1 of Circular 226, "White Pine Blister Rust in Western United States".
size of each
$3\frac{1}{2}$ x 5 15/16"(Fig. 10, for four-color process. Very badly diseased young pine showing aecial blisters.

LANTERN SLIDES

1. Showing various phases of blister rust and its control.

2. Different species of Ribes.

3. White pines, silviculture, utilization, uses, etc.

MOTION PICTURES.

THE PINES (Bureau of Plant Industry). 2 reels (1,997 feet).
The story of the control of white-pine blister rust, as applied to a particular farm in New England; how the pines were protected and were made a valuable crop. Particularly for farmers in the white pine districts, but of general interest.

BLISTER RUST - A MENACE TO WESTERN TIMBER (Bureau of Plant Industry). 2 reels (1,694 feet).
Spread of the white-pine blister rust from Europe to the eastern United States, and appearance in British Columbia; danger from the disease to the five-needled pines of the western United States; lumbering industry and scenic resources imperiled; control and quarantine measures. Of general interest, particularly in the West.

STORY OF WHITE PINE - (Bureau of Plant Industry). 1 reel (945 feet).
Eastern white pine from virgin forest to finished products; second growth; nursery planting; with special reference to the white-pine blister rust, a serious disease introduced from Europe. Of general interest in the East.

MOTION PICTURES (Continued)

LOGGING EASTERN WHITE PINE - (Bureau of Plant Industry) 1 reel (945 feet)
Methods of logging and lumbering as practiced in Pennsylvania; portable sawmills in New England; old-fashioned water-power mill of colonial days. Of general interest in the East.

NATURE'S CROP OF WHITE PINE - (Bureau of Plant Industry). 1 reel (985 feet)
Second growth of white pine, which is largely replacing virgin timber in the East; white pine reclaiming waste lands, sandy soil, and rocky pastures; a valuable crop made more valuable by care and cultivation. Of general interest in the East.

WHITE PINE--A PAYING CROP FOR IDLE LANDS - (Bureau of Plant Industry) 1 reel (889 feet)
Reforestation of idle lands with white pine showing nursery practice, field planting, and care of plantations. Of general interest in the East.

WHITE PINE, THE WOOD OF WOODS - (Bureau of Plant Industry). 1 reel (949 feet).
Eastern white pine from log to lumber, illustrating its wide range of usefulness. Lumber yards, stave and box factory, making screen doors, window screens, boxes, barrels and buckets. Of general interest in the East.

WHITE PINE--BEAUTIFUL AND USEFUL - (Bureau of Plant Industry). 1 reel (897 feet)
Some of the notable uses of white pine; famous houses in New England built of this wood; scenes in Washington and at Mount Vernon. Of general interest.

PHOTOGRAPHS

1. Showing all phases of blister rust and its control.

2. Pines, northern white, western white, sugar, and other 5-needled pines.

3. Ribes - Many species.

Note: The Office has a collection of over 3500 photographs covering the above subjects.

Enlargements can be made from any of the photographs, if desired.

POSTERS AND TAGS

	Copies
Posters 22 x 28" (Black Letters on Manila Card)	
1. Blister Rust Can be Controlled.	800
2. Blister Rust Kills White Pine.	600
3. Look Blister Rust Ahead.	800
4. Protect Your Pine From Blister Rust, etc.	400
Posters colored 18 x 22."	
1. Save Your Pines.	110
Posters Diamond-Shaped 10 x 13"	
1. This Pine Lot Has Been Protected From Blister Rust by the Removal of Currant and Gooseberry Bushes. (5,000 additional posters of this type have been ordered).	40
Tags 3 1/8 x 6 1/4"	
1. This is a Blister Rust Canker (red).	26,000
2. This Wild Currant Bush Spreads Blister Rust.	2,000
3. This Wild Gooseberry Bush Spreads Blister Rust.	3,000
4. Blister Rust is Killing This White Pine.	25,000

SPECIMENS

Test tube specimens showing various stages of blister rust on white pine.

Specimens of blister rust on Ribes leaves.

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BLISTER RUST NEWS

May 1928.

Volume XII

Number 5

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12, No. 5

E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 5 May, 1928

ODE TO A PINE

O, PINE, so strong and straight and tall,
With wondrous strength, inspiring all
Who look upon thee, cresting the hill,
Watching alone through the long nights, chill.
Buffeted by storms which round three rush,
But still thy courage do not crush,
Scarred, yet steady and firm,--O, Pine,
Would I might mould my life by thine!

1922 Gopher Peavey

THOMAS HUXLEY'S IDEAL AS A SCIENTIST

To smite all humbugs, however big; to give a nobler tone to science; to set an example of abstinence from petty personal controversies, and of toleration for everything but lying; to be indifferent as to whether the work is recognized as mine or not, so long as it is done.

NEW YORK TRAINING SCHOOL FOR FOREMEN

Plans have been made to have 25 men, who are to act as foremen of blister rust crews this season, attend a training school in the vicinity of Stony Creek, Warren country. A considerable amount of state land is located in this section of Warren county and practically all of the Ribes species common to New York are there in abundance. May 7 was to have been the opening date for the school, but a post-season cold spell held the Ribes leaves in check and the date has been postponed until the week of May 14.

Full crew work, small crew work and one-man-scouting, all under varying conditions, will be given the men. Instructions covering the preparation of daily reports, time cards, and expense accounts will also be given. It has been the experience of the Conservation Department that the training school has more than justified itself in past years, since it provides a smooth-working field force ready to start the season under full steam, and the agents are relieved of the trouble of keeping green foremen lined up in their work.

The school will be in charge of Mr. H. L. McIntyre of the Bureau of Forest Pest Control, assisted by various blister rust agents and others of the New York "Ribes Hounds" who have had their noses to the trail in past seasons.

C. E. Baker - New York.

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AN EDUCATIONAL SUGGESTION

There are probably towns in New England which have not as yet appropriated any funds for blister rust control or towns where no resident has cooperated in control work. A suggestion is made which may be of value in securing future cooperation in these towns.

Presumably the blister rust has been present for a number of years and that pines are already showing damage from the disease. There may be other groups of pines which are diseased and which at present do not show the damage to any extent but which will die within a few years. It is suggested that photographs be taken of the badly damaged pines and also of the groups of pines, using a wide band of cotton around the infected trees. Photographs of Ribes growing close to the pine would establish the connection between the two. If good negatives are secured, these can be sent to the Washington Office for enlargement, and the enlargements might then be used in the town hall or in certain windows, with proper legends or descriptions.

In towns where there has been no cooperation in blister rust control it is believed that these photographs would help convince the townspeople that there is such a thing as blister rust, that the disease is present in their locality, and that their pine has already suffered damage. Accompanying such photographs an enlarged map of the town might be used, showing the location of the blister rust by large red spots.

R. G. Pierce

BLISTER RUST IN THE ADIRONDACKS

Dr. Walter H. Snell has presented very fully the subject of blister rust in the Adirondacks in the Journal of Forestry, April, 1928, pages 472 to 486. On account of the length of the article it is possible to present herewith only the conclusions and summary. The article as a whole, however, should be read by all those interested in the control of the blister rust.

"The data presented herewith amply justify the conviction that the White Pine Blister Rust is a serious proposition on White Pine land in New York. When weather conditions are at all favorable for the development of this rust and infection of the pine, the damage to stands under 25 years of age is high, and the reproduction may be and usually is, entirely destroyed. There appears to be no logical reason or observational evidence that the Blister Rust has run its course in the Adirondacks, but, on the other hand, it is confidently expected that further serious outbreaks of the Blister Rust will occur when weather conditions are favorable. Hence, it is impossible to avoid the conclusion that Blister Rust control must be a material factor in the regulation of White Pine in New York in the future."

This paper presents the results of studies on the damage to White Pine caused by the Blister Rust, on 16 sample plots of about 16.5 acres of various white pine types in Warren, Essex and Clinton Counties on the west side of the Lake George-Lake Champlain Valley.

The total damage is here represented in terms of per cent of dead and dying trees, but it is emphasized that the damage on each particular plot has been assessed in terms of fully stocked stands of dominant trees.

On these plots, 35.5 per cent of the trees are infected. Of these, 10.7 per cent are now dead and at least 19.3 per cent more are doomed to die, making a damage total of 30 per cent.

These figures are shown to be very conservative, inasmuch as they do not take into account the death of countless seedlings which were killed by the Blister Rust before the studies were undertaken, and inasmuch as there are included thousands of young trees which have never been exposed to serious Blister Rust attack since 1919. Leaving out the latter class alone, the damage is over 50 per cent.

It is shown that in general the older a tree or a stand is at the time of infection, the less is the damage resulting from infection. This does not mean that no commercial damage can take place in the older stands.

A history of the Blister Rust in a locality is outlined, with special reference to the Adirondacks, to prove that the Blister Rust has not run its course and reached its peak in the Adirondacks.

It is shown that the pine lots of the Adirondacks are two-storied, with pines 0-7 years of age and 17-25 years of age, with few or none 8-16 years old. It is demonstrated that the older trees seeded in prior to 1910, that the Blister Rust waves of 1911, 1913, 1916 and 1919 prevented reproduction in the decade 1910-1920, and that the presence of reproduction in the lots since 1920 is due to the absence of any serious Blister Rust since 1919.

It is shown that normal trees are more likely to be attacked by the Blister Rust than the suppressed, shaded and blighted trees. This predilection of the fungus for the healthier trees has affected the sapling stands in the Adirondacks by weeding out the best stock, leaving the poorer trees to compose the future stands and delaying the maturity of the stand. This is not a desirable type of thinning from any point of view. Blister Rust attack of a stand invariably means damage.

It is concluded that the Blister Rust is a serious menace to white pine in the Adirondacks and that Blister Rust control must in the future be a material factor in white pine regulation in New York."

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MEETINGS WITH THE GRANGE, CHESHIRE COUNTY, N.Y.

Four reels of motion pictures were shown at various grange meetings from February 24 to March 8, at which time town warrants were discussed. By showing the reels at these meetings the grange paid for all advertising and invited the public to attend, thereby giving everyone a chance to voice their opinion. In arranging for meetings, towns were selected where control work had been discontinued or never started. Discussion which followed the meetings revealed the reason for not carrying on control work, which is not lack of interest but a desire to keep expenses down, since large sums were being asked each year to build roads or to keep them open in the winter.

The attendance at these meetings ranged from 11 to 62, the last number being in Washington, where a man and his wife walked three miles to attend. Needless to say they were strong supporters of blister rust control.

F. J. Baker - N. H.

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OVERHEARD AT A MEETING

While showing "The Pines" at a meeting recently, two men arrived just as "Mr. Bradley" was telling "Henry" that the currant and gooseberry bushes must come up, and the following conversation was overheard: "How does this blister rust spread anyway?" "Oh, it goes from the roots of the bushes to the roots of the trees and it is easier to pull up the bushes. That's the only way to stop it from spreading."

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"The Pines" was shown at a meeting of the Chamber of Commerce of Marlboro, Cheshire County, N.H., the night before town meeting. A very interesting discussion followed, the result of which was an appropriation of $400.00 the next day.

F. J. Baker - New Hampshire

WARFARE AGAINST PINE BLISTER RUST

Currants and Gooseberries Sacrificed in the Interest of White Pine Forests Otherwise Destined to Extinction Like Chestnuts.

In connection with the campaign to prevent the further spread of the white pine blister rust in Plymouth County, examinations have been made of all the important tracts of white pine in the county. The initial examinations of the woodland areas were begun in 1922, so that six years have now elapsed. During this length of time there has been some regrowth from broken stems and missed bushes, and seedling plants too small to be found in 1922 may now be of such size as to be a menace to the pines. It is essential, therefore, that the owners of white pine in the county begin this year to re-scout their woodlands and pastures and to destroy any stray currant and gooseberry bushes that may be found. While it is essential to make such examinations at least once in five or six years, many owners find it a good plan to be on the lookout for these bushes each spring.

* * * *

In the practice of the science of Agriculture, we plant our seeds and fruit stocks and then protect them while in growth by spraying and the practice of other cultural measures. We do this in the realization that in order to harvest the crop with a maximum of return we must furnish some protection against insect and fungous pests. In the practice of the science of forestry, we take what nature has planted for us or restock our idle lands by planting young trees. As in agriculture, so in forestry, we find that we must provide our forest-crop producers (trees) with some protection against both insect and fungous enemies.

* * * *

If you believe in destroying the weeds in your garden, you will do well to destroy the weeds in your woodlands. These particular weeds, wild currants and gooseberries, are easy to find and destroy, for they grow along stone walls, in stony and wet pastures, along brooks, and in swampy locations in general. The wild varieties resemble the cultivated species, although the former are generally smaller. Look for them whenever you are working about the farm and woodlot, and destroy them for the protection of your white pine.

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The Plymouth County (Mass.) Farmer. April, 1928.

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RANDOM NOTES FROM NEW HAMPSHIRE

Ribes have begun to leaf out fairly well, and aecia has been observed to be quite abundant. Some eradication work has already started and I presume that by the time the News Letter is out things will be going full blast. The season here in New England has been extremely backward and we have been unable to start any eradication work until the last few days.

May 14, 1928. L. E. Newman-New Hampshire

UNUSUAL ACTIVITY OF SQUIRRELS ON BLISTER RUST CANKERS

For some years everyone connected with blister rust control, at least throughout the East, has noted the gnawing of twigs, branches and trunks of white pine at the point of infection. Irrespective of some local opinion to the contrary, it has been definitely determined that squirrels, not porcupines, are responsible for gnawing away infected bark.

While this eccentricity on the part of the members of the family of Sciuridae is not a new thing nevertheless, it may be of interest to blister rust workers to learn of the unusual activity of these rodents in New Hampshire during the past winter.

Recently, during several field trips, the writer has been much impressed by the high percentage of infected pines on which squirrels have been working. An inspection of a heavily infected area in the town of Northwood, comprising about 35 to 40 acres, showed that practically every pine infected had been gnawed by squirrels. Infection areas in other towns showed similar conditions. Although their activities had resulted in completely girdling the twig, branch or stem right down to the live wood, in most cases these animals had failed to eat all of the diseased area, for along the edges of the gnawed portions, aecia were fruiting.

As all of the blister rust control agents of this State have reported observing an unusual number of gnawed cankers, the question naturally arises as to why these animals have been more active than in former years.

It seems to the writer that this situation may be logically explained by the extraordinarily mild winter and the lack of heavy snows. A large percentage of the cankers gnawed were located at or near the base of the trunk, points on a tree generally covered by snow. The extreme mildness of the weather was probably a factor inasmuch as these rodents were no doubt encouraged to more prolonged prowlings than when the cold is intense.

An interesting conjecture arises as to whether the destruction of so much of the fruiting area will assist materially in reducing the volume of aecia that otherwise might be spread broadcast by the wind.

L. E. Newman - N.H.

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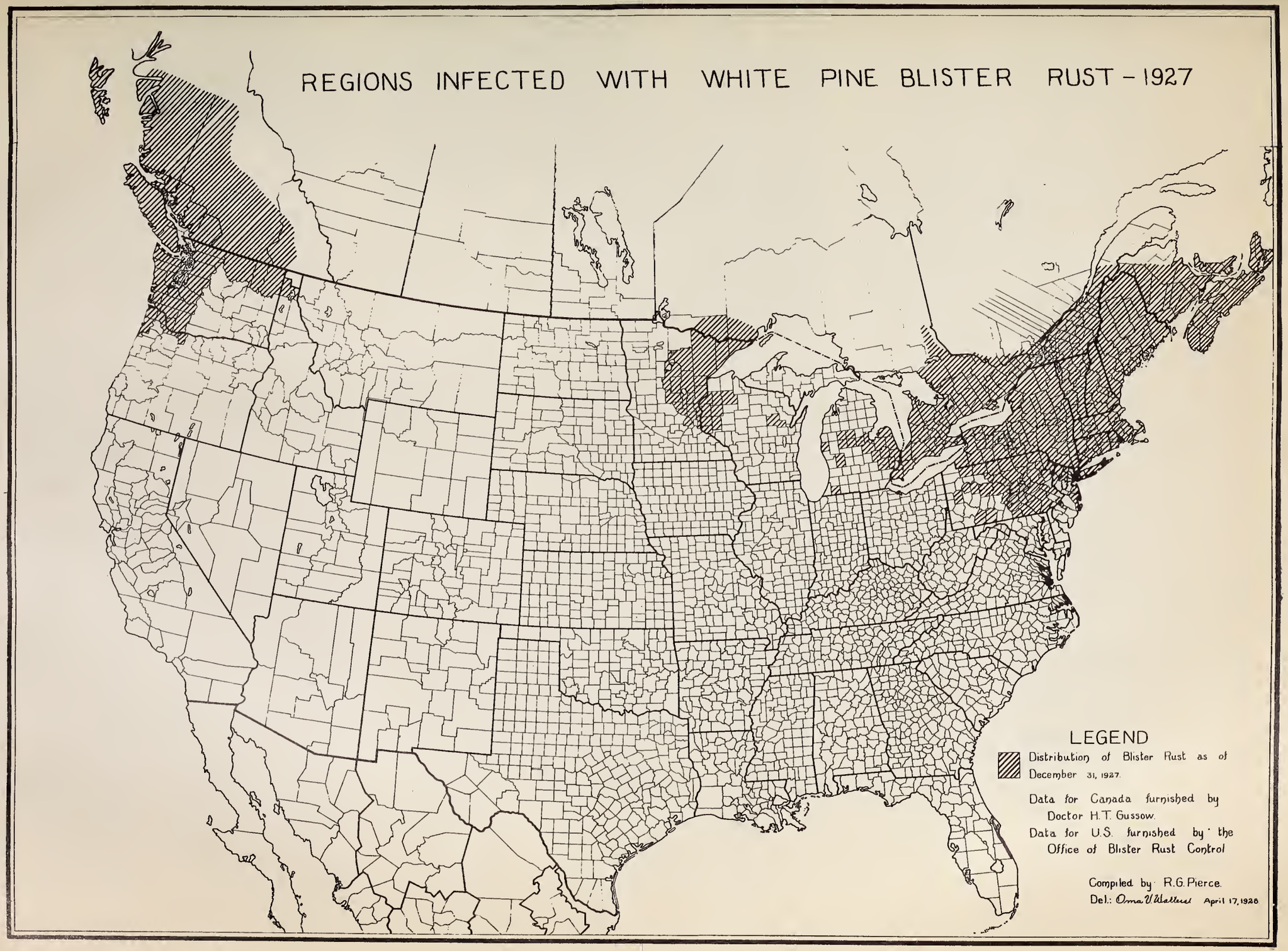
COLLECTION OF FOUR MAP SLIDES AVAILABLE

The Washington Office has a collection of four map slides which may be of interest to you and which are now available.

No. 1149, showing the range of five-needled or white pine in North America.
No. 2983, showing area in the Northeast which has been protected from the white pine blister rust.
No. 3359, showing the spread of the blister rust in the Pacific Northwest 1921 to 1926 inclusive.
No. 3704, showing the distribution of the white pine blister rust in North America as of December 31, 1927.

R. G. Pierce


REGIONS INFECTED WITH WHITE PINE BLISTER RUST - 1927
LEGEND
Distribution of Blister Rust as of December 31, 1927.
Data for Canada furnished by Doctor H.T. Gussow.
Data for U.S. furnished by the Office of Blister Rust Control
Compiled by R.G. Pierce.
Del.: Oma V. Walters April 17, 1928

AGENT BOOMER TALKS BLISTER RUST CONTROL DURING FORESTRY WEEK

Presents Subject to 20 Schools in Carroll County, N.H.

Mr. George Spinney, Ranger on the White Mountain National Forest, and I helped to keep American Forest Week this year by talking to 20 schools on Monday, Tuesday and Wednesday. In this way approximately 727 boys and girls were reached. Mr. Spinney talked about the dangers from fire, and I talked about blister rust, showing specimens and pictures of infected pines and Ribes. We talked in five towns and had excellent co-operation from the school superintendents.

"Pine blister" is becoming quite well known to the young folks, many of the older boys had seen it in the spring stage and some knew skunk currants.

S. H. Boomer - New Hampshire

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SERIES OF CIRCULAR LETTERS TO PINE OWNERS BRING TANGIBLE RESULTS

The town of Norwell, Plymouth county, Mass., has been the center of some unique educational work in connection with the work of stimulating good forestry practices, including control of the white pine blister rust.

Through the courtesy of Agent E. M. Brockway, the Washington Office has received a set of eight mimeographed circular letters to timber owners, which appeared over a period of approximately three months, beginning January 17. The letters were sent out over the signature of Mr. G. C. Norcross, County Agent. Each of the letters is one page and all but one are illustrated, five of them being illustrated with line drawings made with a stylus and mimeoscope.

The subjects of the letters are as follows: Increase the Value of Norwell Pine, The Wolf Tree, Trees to Remove, Pruning Pine, Heeling in Young Pine, Release Cuttings, Planting Pine Seedlings, and Protecting Pine by Removing Currants and Gooseberries. As a result of this concentrated work in Norwell, 200 acres of white pine have been planted this spring.

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The above series of letters is being called to the attention of the agents and state leaders because it represents a well-organized plan of educational work which has furnished the pine owners of Norwell printed facts on practical phases of forestry. Each letter had a separate theme, thus making the letter easier to grasp. The illustrations aid considerably in putting the ideas across. This educational work preceded American Forestry Week and the planting season, hence resulted in a great increase in reforestation. Mr. Brockway has cooperated very closely with the County Agent in this better forestry work.

There is an accumulative effect secured by such circular letters as were sent to the townspeople of Norwell, Mass., which could not fail to bring results. It is suggested that some series of letters bearing upon the value of white pine, its importance to the community, and the necessity of protecting it from the blister rust might be of value in those towns which have not cooperated in blister rust control.

R. G. Pierce.

YOUNG INFECTIONS

Everyone acquainted with white pine areas in Lisbon and Littleton, N.H. will vouchsafe the fact that old infections in these localities are as numerous as the sands of the sea. So last summer in souting in advance of the crew or checking in the field I made special effort to keep an eye open for young infections. To my amazement I found very, very few. In fact I would venture to state that young infections would not amount to one per cent on each infected pine lot. I mean by young infections those that have come in from 1922 up to date.

These observations were made in lots where the Ribes were eradicated last summer. They adjoin lots that were protected the year before and were in towns that had practiced control measures for a good many years. I do know that a great many Ribes which have been uprooted from these towns in these years had considerable bearing on the absence of young infections. Still, I wondered a lot about the whys and wherefores.

During the month of March, I had the pleasure of entertaining Mr. Leslie N. Goodding, State Leader of Oregon. We visited many of the heavily infected areas in my district. Without my mentioning the fact he noted the absence of young infections on these areas in Lisbon. When we looked over a pine lot in Bath we found but two young infections and hundreds of old infections. The Ribes on this lot have never been eradicated, and the nearest eradication done in this town was four miles from this place.

Apparently there has not been a good pine infection year in this locality during the last few years. I am wondering if other agnets have made similar observations.

T. L. Kane - N.H.

Edit:-Next year you will probably find plenty of young infections in unprotected areas as a result of the heavy Ribes infection of 1927.

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USE OF CHARTS AND GRAPHS GROW

The Bureau of Agricultural Economics is coming more and more to use charts and graphs to put over to the public the meaning of statistics and other economic information. Charts and graphs are taking an increasingly important place in the illustration of department publications, and they are being used to an increasing extent by officials of the department in their lectures to the public. It has been found that charts and graphs of economic situations are far more useful to both the bureaus and important committees of Congress than large masses of statistical data printed from type. In the last five years the number of graphic presentations of information prepared in the Bureau of Agricultural Economics has been increasing steadily, and the increase in 1928 probably will be greater than for any year before.

The Official Record - 4/11/28

WHITE PINE BLISTER RUST SURVEY IN PENNSYLVANIA

In 1927 an attempt was made to determine the presence or absence of blister rust as far as possible over the whole State of Pennsylvania, by enlisting the aid of the schools of the State. The plan approved and put into effect by the cooperating agencies involved a request that the school children throughout the state be asked to examine the currant and gooseberry leaves in their own or neighbor's gardens, to collect any leaves which were judged to resemble the colored illustrations provided for the purpose, and to return such specimens, through the teachers, to the Department of Agriculture at Harrisburg for confirmation.

Since this plan of survey does not depend upon the children for a diagnosis of disease, and since errors made by them would not be of importance from the negative standpoint, it was considered that this method of survey could be relied upon to replace a considerable amount of scouting, at a very reasonable cost.

Summarizing the results of the survey it is apparent that out of the 67 counties in the state reports were received from 53. Originally it was planned to leave out several counties because they were outside the pine area entirely; two or three counties failed to cooperate, and other refused, so that 57 counties in the State were asked to assist. In the 53 reporting, returns were received from 1,761 schools. These schools reported that 13,061 gardens had been examined and 253 of these schools sent in 465 envelopes containing specimens with blister rust. These rust findings are distributed over 37 counties and the area so affected extends nearly to the Ohio border on the west, and on the south to the Maryland line. Since the number of envelopes submitted was 7,123 the percentage of specimens containing blister rust was 6.5%; similarly the percentage of schools reporting rust was 14.7%.

On the whole the survey was successful beyond the wildest expectation. The scattered findings of blister rust in former years had been altogether confined to the northeastern counties and the widespread occurrence of rust during 1927 was quite unexpected. It is to be noted, however, that the scouting undertaken in the usual manner earlier in the season had already given an intimation that this was an exceptional year, since rust had been found in eight counties outside the known rusted area previous to the school survey and entirely independent of it. In additon, a finding of some years' standing was made later on in the season that had no connection with school survey work. There is every reason to believe that the widespread occurrence of blister rust this year has been quite exceptional and an effort has been made to account for it here and elsewhere through climatic conditions. It is perhaps all the more fortunate that the survey was made this year, since in addition to providing data on the Pennsylvania situation this survey is likely to be of value in indicating the distance over which rust infection may carry when conditions are favorable.

April 17, 1928. W. A. McCubbin - Pennsylvania.

ARBOR DAY IN NORWELL, MASSACHUSETTS

On April 26, Arbor Day exercises were held at the Norwell High School. Starting at 9:00 a.m. there was an assembly for the whole school; songs were sung by members of the Tree Club; and poems regarding forestry were read by the pupils from the different grades. A member of the Norwell Town Forest Committee spoke of the part the young can play in forestry today. The Boys and Girls Club Agent of the Plymouth County Extension Service, Mr. Freeman, then spoke of forestry as an important part of club work. E. M. Brockway, the District Blister Rust Agent, spoke of blister rust and its relation to the growing of white pine forests in the county.

Following the exercises, the remainder of the day was devoted to the planting of trees. Each classroom was divided into groups and each group had so much time in the field. Two members of the Town Forest Committee and a hired man assisted in the planting of the trees, under the general supervision of Mr. Brockway. About 300 scholars took part in the tree-planting activities, each scholar planting at least one tree. In all, 3,000 (white pine) were set out during the day.

During the tree-planting operations, groups of scholars were also instructed in the methods of searching for Ribes.

E. M. Brockway - Mass.

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BROCKWAY STARTS THE BALL ROLLING IN MASSACHUSETTS

Southeastern Massachusetts is apparently the Florida of the State of Massachusetts for in that section wild Ribes unfold their leaves very early. This season, the first wild Ribes were uprooted on April 20 in the town of Easton in Bristol county and in the town of Norwell in Plymouth County, in connection with checking the estates in these two towns.

Agent Roop was a close second in starting field work in Massachusetts for reports from his district in the northeastern part of the State, show that wild Ribes were removed in the town of Andover in Essex County on April 23, Conditions in Essex and Middlesex Counties are considerably backward as compared to the situation south of Boston. To the west of Boston, in Worcester County, Franklin County, Hampden County and the Berkshires, reports of snow conditions were still common as late as May Day.

W. J. Endersbee - Mass.

BERKSHIRE BITS

Sixty Boy Scouts of Great Barrington and Housatonic, Mass. went on a blister rust and forestry hike on April 20, They were under the direction of Agent Endersbee of the Berkshire district

On May 5, fifteen Boy Scouts of Great Barrington planted 3000 white pines on the town forest. The planting was supervised by the Superintendent of Parks and Agent Endersbee.

MASSACHUSETTS SHIPMENT TO CALIFORNIA VIOLATES THREE QUARANTINES

In a letter dated April 30, Mr. A. C. Fleury of the Bureau of Plant Quarantine and Pest Control, California State Department of Agriculture, reports that Mr. C. M. Munger, State Quarantine Guardian at Tulare, Calif., intercepted a mail shipment of cut flowers, moss, evergreens, five-leafed pine boughs, and pussy willow scions made by an unknown consignor at 12 Park Road, Winchester, Mass., to Mrs. G. C. Route B, Tulare, Calif. While no statement is made as to the disposition of this material, it is undoubtedly either destroyed or returned to the sender. No gipsy moth certificate accompanied the shipment. This shipment not only violated the gipsy moth and satin moth quarantines, but also the blister rust quarantine, and possibly the corn borer quarantine.

* * * *

R. C. Althouse,
Assistant to the Chairman

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STATE COOPERATORS HOLD QUARANTINE CONFERENCE IN CHICAGO

A meeting of Federal quarantine inspectors, State cooperators, and officials of the Chicago-Northwestern Railroad, and the American Railway Express Company was held at the Atlantic Hotel in Chicago during the afternoon of April 10. Mr. Vilas, General Manager, and Mr. Johnson, Superintendent of Claims Department of the Chicago-Northwestern Railroad and Mr. Stevens, Superintendent of the Claims Department of the American Railway Express Company, explained in a very interesting way the transportation problem of these companies, especially such problems as pertain to handling perishable matter as nursery stock.

Dr. W. A. McCubbin, of the Pennsylvania Department of Agriculture, Mr. E. L. Chambers, Wisconsin State Entomologist, Mr. P. M. Eastman, New York Bureau of Plant Industry, and Mr. J. D. Winter, Minnesota State Department of Agriculture, the State cooperators present, spoke about the quarantine problems peculiar to their states, as well as giving their views about national quarantine enforcement needs. The meeting was a decided success.

Writing about his observation of the quarantine work at Chicago, Dr. McCubbin in a recent letter to Mr. Detwiler, says "I hope that this work, which is developing in such splendid manner, will be continued and enlarged until it forms a network of connecting type covering the channels of trade in such a way as to practically eliminate the danger of insect and plant disease spread through these trade channels".

May 5, 1928.

R. A. Sheals
In Charge, Blister Rust Quarantine Work
in the Eastern States.

BLISTER RUST DISCOVERED ON PINE IN LEWIS COUNTY, N. Y.

During the week of April 18, George Paige, blister rust foreman, who is mapping and scouting white pine areas in the town of Diana, Lewis County, found a considerable amount of blister rust in a natural stand of white pine. This is the first time that the disease has been found on pine in Lewis County. Heretofore, the rust has been found only on currants and gooseberries.

Mr. Paige reported the finding to Agent Bowlby and also submitted a young pine with a stem canker as evidence. Newspaper articles were written for all the papers going into that section of the county. Mr. Paige has secured permission to place a specimen of diseased pine in a store window in the village of Harrisville, his headquarters. He has prepared a poster for this window demonstration, telling where the disease was found and also where to obtain information pertaining to inspection of the pines and control of the disease.

I. S. Bowlby - New York.

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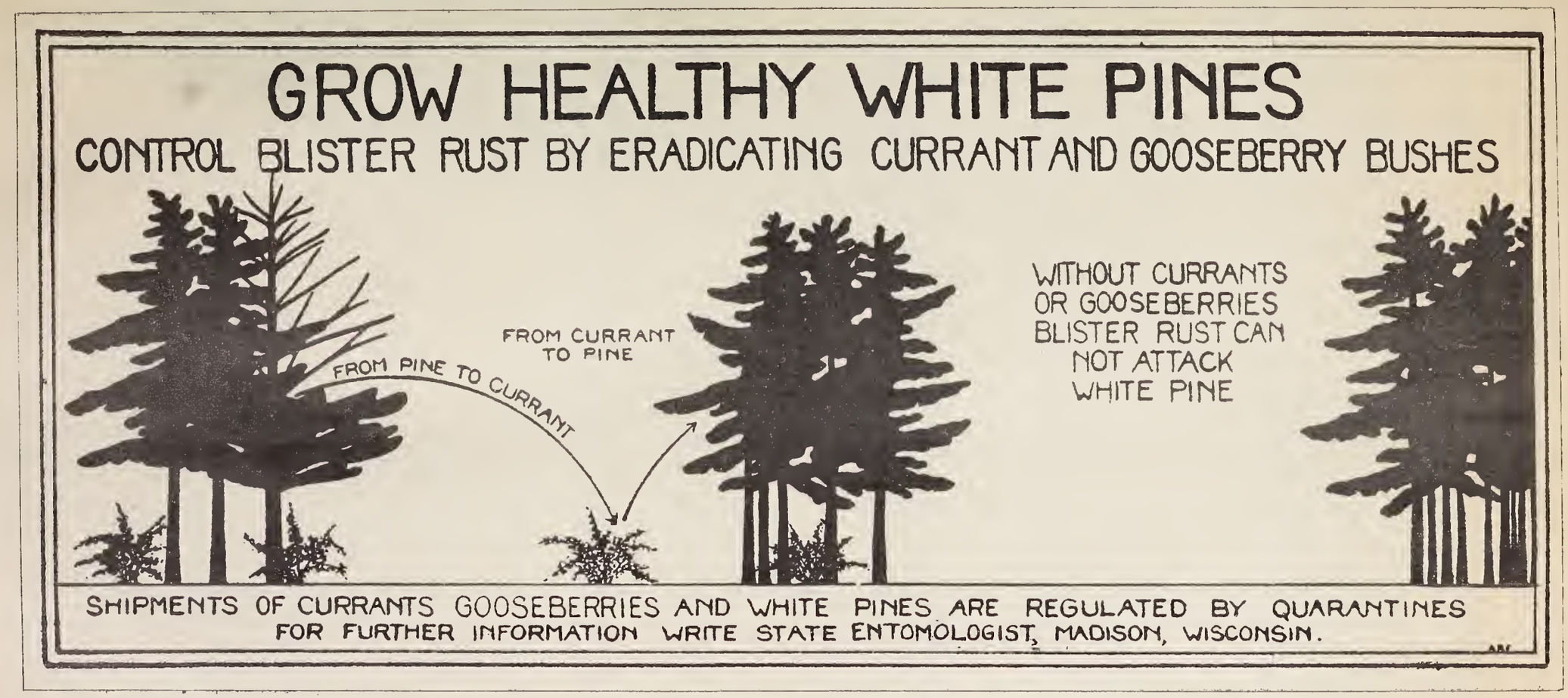
DOING MEANS REMEMBERING

Why the Extension Service of the United States Department of Agriculture always endeavors to get people interested in doing something rather than in listening to a speaker or watching him is indicated by a letter from a State demonstrator who has been conducting schools in farm accounting. In these schools each person who is present and ready to learn is expected to work out the business record of a typical farm in one of the account books provided in the course. Each step in the record keeping is explained as the school progresses until each pupil understands it. The pupils are then able to go home and work out the records for their own farm business, using the one they have already worked out as a guide.

"From our experience in holding these schools," says the demonstrator, "we have arrived at the following statistics: People composing a general audience will remember one-tenth of what they hear, three-tenths of what they see, five-tenths of what they say, and nine-tenths of what they do. Therefore, we believe in having people do for themselves the thing we want them to remember."

U. S. D. A. Press Service Clip Sheet

Edit: The practice in some states of having pine owners cooperate in the actual digging out of the currant and gooseberry bushes is along the same line as the educational practice recommended by the Extension Service. Also I have seen pine owners working with crews. Do you remember, King, the time you had seven or eight men in line, two of them being pine owners? The pine owners may have slowed down the speed of the crew, but the same pine owners gained in experience.



The above cut is printed in green on a white background. This makes a very attractive blotter and is being used in educational work by our cooperator the State Entomologist of Wisconsin.

BLISTER RUST AGENTS TAKE OVER NEW DISTRICTS IN NEW YORK

Agent C. E. Baker who has been stationed in Saratoga county for the past year has been transferred to western New York, where it is planned to make a general clean-up of the environs of all nurseries growing white pines, and in addition to eliminate all cultivated black currants. Wayne county has been selected as a starting point because of the several large nurseries growing white pines in that county.

Noble Harpp, Agent in Warren county, has taken over Saratoga county as part of his blister rust district and will direct the work of assistant agent Barber. Mr. Barber will take care of some scattered work left for this season in the county. Agent Harpp will also direct the work in Washington county. Assistant agent Raymond Paige has been acting agent in this county since the transfer of Agent I. S. Bowlby to his new district in Lewis county.

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Ribes leaves are beginning to pop out under the influence of a few warm days and everybody is itching to get the rust polished off the old Ribes hook, and test their strength on some of the big ones.

May 7, C. E. Baker - New York.

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DATA ON DISCOVERY OF AECIA THIS YEAR

Several of the agents have reported their discovery of the first aecia appearing this spring and the data has been compiled in the following table:

Place	Date	Agent
Berkshire Co. Mass.	April 10 (last year April 17)	W. J. Endersbee
Southeastern Mass.	April 13	E. M. Brockway
Moultonboro, Carroll Co. N.H.	April 21 (last year April 20)	S. H. Boomer
Sunapee, Merrimack Co. N.H.	April 23	T. J. King
Harpswell, Me.	April 26	W. O. Frost
Kennebec County, Me.	April 30	J. M. White

It is noted that Mr. Boomer and Mr. Endersbee have been keeping track of the earliest aecia located last year. Did any other agents note the first appearance of aecia in their districts? If so, let's have it.

R.G.P.

COMPTROLLER'S DECISIONS

Where a bid to furnish the Government telephone brackets has been accepted the bidder is not entitled to relief for any additional amount over and above the amount stipulated in the accepted bid on the ground of an alleged mistake having been made in the bid, unless there was a mistake of fact apparent on the face of the bid or such discrepancy between his bid and the other bids submitted as to put the Government contracting officer on notice when the offer was accepted that a mistake had been made and which would raise the implication that the offer was accepted with the intention of taking advantage of such mistake.

A per annum employee of the Forest Service whose resignation was accepted effective December 26, 1927, and who worked December 24, 1927, is entitled to pay for December 25 and 26, a Sunday and a holiday.

STATE LEADER NINMAN RETURNS FROM EUROPE

Mr. Herman J. Ninman, State Leader in Wisconsin, returned to Washington May 1 from an extended trip in Germany and Switzerland. In Germany where he traveled for two months, Mr. Ninman was accorded every facility possible to make his stay agreeable and profitable. Among those met were the Chief Forester Count von der Schulenberg of Berlin, Prof. Dr. Appel and Prof. Dr. Ludwig of the Biological Institution of Agriculture and Forestry at Berlin-Dahlem, Chief Forester Dr. Pause at Dresden, Prof. Dr. Munch at the Forest School at Tharandt, in charge of the forest experiments of the school, Freiherr Karl von Tubeuf at Munich, Chief Forester Oelkers, Prof. Dr. Rhumbler, and Prof. Dr. Falk, Plant Pathologist at Hann. Muenden.

Mr. Ninman was particularly interested in the work being done in Germany on the source of tree seeds. He found instances where Scotch pines of the same age and on similar sites were strikingly different in height, diameter growth, and form. The German foresters assign this difference in present stands to differences in the quality of the parent seed trees.

A REACTION TO PINE AND BLISTER RUST ARTICLES IN AN EXTENSION BULLETIN

(From a letter to W.J. Endersbee)

"Dear Sir:

We read with admiration your contribution to the February Farmers' Bulletin, "That Old Woodlot of Mine". I have wanted to ask you about planting some little pines but found that you already answered most of the questions about planting in your article in the Berkshire Farmers' Bulletin that came yesterday."

WHERE, WHEN and HOW to PLANT WHITE PINE

There is more to the job of planting pine than buying some trees and sticking them into the ground 6' x 6' apart in some convenient waste area. Woodland owners should not decide to plant until they determine a suitable place for planting, which kind of trees to plant, and whether it will be possible for them to care for the plantation.

White pine cannot be expected to make progress if planted in bog holes or left to grow under dense shade. Pine planted too deep is sure to be retarded or killed. A plantation usually needs to be freed from competing weed trees such as gray birch within a few years after planting. No blanket rule for spacing can be laid down if the best results are desired. Trees need to be planted 6' by 6' or closer on open land to offset possible weevil damage, and also to keep the size of the knots at a minimum. On sprout or cut-over land fewer trees to the acre, 700 to 800, are needed. The sprouts act as fillers which have a similar effect to close planting. White pine plantations must be free from currant and gooseberry bushes to resist the blister rust disease.

If planting is to be done, consider whether the soil is sandy, medium, or heavy, and whether it is wet, moist, or dry. Is the area field or sprout land? Are the sprouts large or small, dense or sparse? These factors should determine what, when and where to plant.

The following directions are given for planting white pine:

1. Do not plant white pine underneath hardwood on heavy soils.
2. Do not plant white pine underneath gray birch on sandy or light soil unless the birch are to be cut within five years.
3. Do not plant during the summer.
4. Do not plant on a cut-over pine lot until the second year after the pine has been cut in order to avoid insect damage from the Pales Weevil.
5. Where it is too wet or extremely dry and sandy, white pine will not make good growth.
6. Plant at least 1,000 or more trees per acre on field land. Density is in direct proportion to quality in young stands.
7. Fewer trees per acre will be required on sprout land. The hardwood sprouts act as fillers that provide the necessary density.
8. On cut over land where groups of desirable hardwood sprouts from small stumps less than two inches in diameter or seedlings such as white ash, oak, white birch, rock maple, basswood, etc., are growing, do not plant among such groups, but allow them to come up along with the surrounding planted pine. This will lead to the development of a desirable mixed forest of pine and hardwood.
9. When planting among hardwood stumps, avoid planting close to the stumps. The planted trees will thus have a better opportunity to compete with the hardwood stool sprouts.

10. Keep hardwood sprouts from growing up over the tops of planted pine. Sprouts do not need to be cut clear back to the ground. They are better lopped part way through.

11. Protect white pine plantations from disease such as blister rust, and from insects such as white pine weevil.

12. Red pine is often suitable for very light soils or on sites where there is apt to be severe damage from the white pine weevil. Red pine is not susceptible to white pine blister rust, is usually free from weevil damage, is more resistant to fire than white pine, but does not endure shade as well as white pine. Red pine is susceptible to what is known as sweet fern rust. There are few instances of serious damage from this disease. Red pine lumber is not suitable for such general use as white pine lumber.

13. On sprout land use four year old transplants. On field land three year old transplants usually give satisfactory results.

14. Trees can be purchased from the State Forest Nursery at Gerrish, N.H., or at commercial nurseries that handle forest trees.

15. If trees are not to be planted as soon as received, upon arrival heel them in at once. Save the moss in which the trees are packed for use at time of planting.

16. When planting, carry the trees in a planting basket or bucket in the bottom of which damp moss has been placed. Do not have the roots covered with wet clinging mud that causes the roots to stick together.

17. On sprout land slit planting is satisfactory. On sod land mattock planting may be used but is not necessary. For fall planting under all conditions slit planting should give the best results. Planting in the fall properly done gives satisfactory results.

18. When using the slit method, work the planting tool back and forth enough to form a space for the spread of the roots. There are several kinds of tools for slit planting. A practical one has a blade about six inches wide and five inches long with a bar for the foot at the top. This is attached to a peavy handle. The tool is strong and has weight enough to be forced down among roots and rocks, while the blade is short enough to overcome the evil of deep planting.

19. The hole made with the mattock is dug with two or more strokes. The first stroke removes the sod, and the second makes the hole.

20. Do not plant too deep, but attempt to get the tree in at the same depth as it was when taken from the nursery.

21. Do not bunch the roots, but spread them by a light shake when the tree is placed in the ground.

22. Firm the tree in well with the heel.

23. To make the investment sound, classify the plantation under the New Hampshire Walker Classification law.

24. Two men under ordinary conditions can plant about 1,000 trees a day or about one acre.

25. Good planting is not indicated by just whether trees live, but whether the trees make good growth during the first few years after planting.

UNIVERSITY OF NEW HAMPSHIRE EXTENSION SERVICE
Press Bulletin 145, April, 1928.

BRITISH SUFFERED FROM LACK OF WHITE PINE FOR SHIP MASTS DURING THE REVOLUTIONARY WAR

Professor Albion of Princeton University in his book "Forests and Seapower" brings out the fact, that the British Navy suffered severely during the Revolutionary War through the lack of sound masts and ship timbers - a lack brought on by reason of the colonists of New England stopping the shipments of the great masts of white pine upon which the British depended.

Admiral Kessel of the British Navy was court-martialed and relieved of his command during the Revolutionary War, because he retreated into the harbor of Portsmouth, before a French fleet. His excuse was that he dared not risk a battle because of the lack on the home docks of good naval stores (especially masts) to repair the damages he would have received. He felt that once England was soundly whipped (the French did have a superior fleet), and were unable to repair their ships, the French would blockade England, and thus cut off the transportation of men and munitions to its armies fighting our colonists.

Professor Albion shows that all nations, in the most critical periods of war, were often severely handicapped through the lack of adequate wood supplies. This situation prevailed in naval warfare until 1862 when, in the battle of Hampton Roads, iron definitely replaced wood as the better material for naval architecture.

Yet in the World War the wood ship was swiftly revived a thousand strong for the emergency to supply the bridge of ships that led to victory. In a thousand other ways wood contributed to the victory of the Allies - from American spruce for the airplanes of the Allies and walnut for rifle stocks, to the piling and timbers of the vast war ports that we built on both sides of the Atlantic.

C. S. Herr - N. H.

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"Help Save Our Trees" is the appeal of the American Green Cross. This organization presents the need for farm relief, flood control, water conservation, renewal of soil fertility, restoration of streams, fish, game and birds, and rebuilding of recreational areas through comprehensive programs of scientific reforestation and engineering projects. Their headquarters are at 428 Bradbury Building, Los Angeles.

Extract from the American Nurseryman of March 15, 1928.

Edit: While the above slogan is an appeal to the sentiment, and may not have much appeal to the average adult as a dollars and cents slogan, yet it should have a very great appeal to the rising generation. Our whole work may be summed up in the paraphrase "HELP SAVE OUR WHITE PINE TREES".

THE WOOD-USING INDUSTRIES OF MASSACHUSETTS - 1926

Eastern White Pine Furnishes 43% of the Wood Consumed

This bulletin appears to be a very thorough survey of the wood-using industries of Massachusetts. "The information has been gathered, not by correspondence, but by personal visits to over 95 per cent of the concerns engaged in wood work." These industries consume annually 450,000,000 feet of lumber, imported into the state from every forest region of this country and representing about 40 major species. Two-thirds of the lumber consumed comes from New England, 16 per cent from the southern forests, and a little less than 8 per cent from the western forests, the western species being principally Douglas fir and the three western soft pines. Eastern white pine, as may be expected, furnishes most of the lumber--about 43 per cent of the total. Douglas fir and the western soft pines, combined, furnish a little less than 7 per cent. Most of the lumber, 47 per cent, goes into boxes and crates. A heavy proportion of the remainder consists of industrial uses requiring hard wood.

J. B. Downs.
Harvard Forest, Petersham, Mass. 1928. Bul. 12,p.85
In Journal of Forestry, April 1928.

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THE FOREST WORKER

The U. S. Forest Service issues an excellent bimonthly publication entitled "Forest Worker", which digests forestry news for the country in a very creditable manner. Sections are devoted to State and Government news, educational and extension work, forestry news of general interest, and to items on forestry in foreign countries.

Heretofore it has been possible to add the names of some of our agents to the mailing list for this publication. However, in reply to a letter requesting that the Forest Worker be sent to one of newly-appointed agents, Mr. C. M. Ballard, Chief of Publications of the Forest Service advises as follows:

> "I regret very much to tell you that it is not possible to place any more names on our mailing list to receive free copies of the Forest Worker, for the reason that the Bureau of the Budget has restricted us to 1,000 names to send free copies to and this limit has already been reached."

The Forest Worker may be secured from the Superintendent of Documents, Government Printing Office. The yearly subscription rate is 25 cents.

L.E.H.

TIMBER GROWING AND LOGGING PRACTICE IN THE LAKE STATES*

Frequent references are made in this bulletin to the white pine. A few of these follow:-

Northern white pine once attained its best development within the Northern Hardwoods type, the evidence of this taking the form of scattered, big trees, doubtless remnants of a much denser stand of white pine which was gradually crowed out by incoming hardwoods. Most of the white pine has now been removed from these hardwood stands. The hardwood forest is on fair to good agricultural land, much of which, were there a demand for it, might be cleared, settled, and farmed.

In the Pinelands type, the Norway and white pine intermingle. On better lands white pine predominates; on the lighter soils, Norway pine. Originally white pine occurred as a district forest, chiefly in the central part of Michigan and Wisconsin and the east-central part of Minnesota on moderately fresh sandy or loamy soils. Where it is still found, white pine grows either in pure second-growth stands or as occasional trees in the forest of Norway pine or hardwoods.

Control of the Blister Rust

In any scheme of intensive forest practice the control of diseases and insects must be taken into account. Aside from the white-pine blister rust and some diseases of aspen and paper birch, the forests of the Lake States are comparatively free of serious disease. The white-pine blister rust, although always a menace, is at present under control in the region, and serious losses of white pine are not likely from this cause if the white-pine forests are protected by the eradication of gooseberry and currant bushes from the areas of and adjoining white-pine stands.

Reducing White Pine Weevil Damage

As a means of reducing the damage caused by the pine weevil in a white-pine plantation, the plantation should be set out very dense, not less than 1,200 trees to the acre. Even closer planting would be preferable. This close planting protects the trees from injury by the white-pine weevil, as the insect does not attack so readily trees growing in dense stands, and the effects of the attacks which do occur are rapidly outgrown by the trees. The extra cost in planting a larger number of trees per acre is justified in the long run, partly by the reduction of the possible loss through the pine weevil and partly by the high quality of the timber.

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*U.S. Dept. of Agri. Dept. Bul. 1496, Feb. 1928.

Edit: If you have not received a copy of this bulletin and desire one, I would suggest that you write to the Office of Information, Department of Agriculture at Washington.

AMONG OURSELVES

Agent G. F. Richardson, Jr., of New Hampshire announces the birth of a son. Congratulations George.

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Mr. Al Fivaz left May 14 for Warrensburg, N.Y., where he will have his summer headquarters.

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John Griffiths returned from the University of Cincinnati, where he has finished his freshman course in Civil Engineering, and left Washington with Mr. Fivaz.

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Ye Editor is glad to report that Mrs. Fivaz, nee Bishop, has recovered from her sick spell.

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Jerry Finamore, messenger in the Washington Office, resigned May 10 to enter the Treasury Department. Good luck to you Jerry. You are following in the footsteps of Louis Barr and Charlie Ball.

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News from W. J. Endersbee of Massachusetts has been received to the effect that he has been awarded the silver cup and medal in the handicap bowling tournament of the Barrington Club for 1928. Say Bill, You'll have to look to your laurels, our noted "Doc" Martin rolled 155 'tother day while Posey and Sheals were just over the century mark.

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Mr. Roy G. Pierce spent a week in New York City and Atlantic City, with his family. He says he took two dips in the big briny.--Temp. 54° F.

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Dr. J. F. Martin left May 17 for a short trip to New York State to accompany Wisconsin State officials on an inspection of blister rust infection area in the Adirondack region.

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We are very sorry to report that Mr. E. T. Holland, affectionately known as "Eddie" at the Washington Office has had to take annual leave on account of sickness and is now in the hospital at Cassadaga, N. Y. We trust, Eddie, that you will take care of yourself this time and not overdo!

PUBLICATIONS

Blister Rust

Snell, Walter H. Blister Rust in the Adirondacks. Journal of Forestry Vol. 26, No. 4, April, 1928, pp. 472-486. See also page 123 of the News Letter.

BLISTER RUST NEWS

June 1928.

Volume XII Number 6

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12, No.6.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 6. June, 1928.

IS EDUCATIONAL WORK DURING THE WINTER EFFECTIVE? IT IS!

In the April, 1928 issue of the Blister Rust News, reference was made to the cooperation promised by the owner of the Hubbard Estate in Wellesley, Mass. As originally agreed, Agent Brockway interviewed the superintendent this spring to make arrangements for necessary crew work. Much to his pleasant surprise, he found that the superintendent had already visited all the house lots into which some of the estate had been divided, and had removed all cultivated Ribes, including flowering currants, and had destroyed the same by burning. This is certainly an instance where real cooperation resulted from the efforts of the blister rust agent in conducting educational work during the winter period.

E. M. Brockway - Mass.

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THE ROLE OF RIBES AS WEEDS

In blister rust educational work, we have long since appreciated the value of presenting to a prospective cooperator all the analogies possible. We have told of the other dual-host diseases, such as the wheat rust, the cedar rust, and the ash rust. We have pictured the mysterious change that takes place when a tadpole develops into a frog. We have likewise called attention to the almost miraculous transformation of the ugly-looking caterpillar into the beautiful butterfly or moth.

In New England in particular, we have found the story of the Chestnut Blight (while hardly a complete analogy) a most useful agent in popularizing the complicated life history of the blister rust and the control of the disease. Have we not neglected to stress the analogy, likening Ribes to weeds, and the operation of the removal of Ribes to the weeding of the farm garden? In other words, should we not endeavor to impress upon the owner the idea that Ribes are really forest weeds, weeds that are as injurious to the growth of white pine trees as the witch grass of the farm is detrimental to the growth of agricultural crops.

This point was very well brought out by Agent Brockway in a recent contribution to the Plymouth County (Mass.) Farmers, for April 1928. Extracts from this article appeared in the May issue of the Blister Rust News, page 125.

C. C. Perry - Mass.

SOME MICHIGAN NOTES ON RIBES

Last week I took a rather hurried trip around the "thumb" area. Found that the currants and gooseberries were getting well along in leaf and some flower buds were visible. Estimated the leaves of most cultivated bushes were about half size. Wild gooseberries were also in the same approximate condition, with R. americanum not so far advanced. These observations held general throughout the area scouted. This week or next I am going up state and will take more accurate date regarding leaf and flower progress. Am also to make a collection of as many species of Ribes as I am able to find. Will endeavor to get flowers, twigs, and fruit where possible.

May 14, 1928. D. J. Stouffer - Michigan.

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NEW ILLUSTRATED CIRCULAR ON BLISTER RUST IN PRINT

Miscellaneous Publications 22 and 23, the Eastern and Western editions, respectively, of the revision of Misc. Circ. 40 are now available. Misc. Pub. 22 is entitled "Protect White Pine from Blister Rust". Misc. Pub. 23 is entitled "Protect Western White Pine and Sugar Pine from Blister Rust". While the colored portions of the new circulars are the same as those appearing in Misc. Cir. 40, the other photographs are different. The size of the circulars has been reduced.

Each state leader in the East is being supplied with a quantity of the Eastern circular, while Mr. Wyckoff is being sent the bulk of the Western edition.

R. G. Pierce.

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PLENTY OF RAINE IN MAINE

Rain--rain and more rain. It is in fact raining in torrents as I write this. The swamps are full of water, the scouts are discouraged, foremen are giving up their jobs and the farmers are so far behind with their planting that when you say, "blister rust" they can't hear a sound. What promised to be the biggest year in Maine blister rust history has surely started off with wet feet. We usually figure on May and June as our two best months for cooperation. May has gone with almost nothing in the way of cooperation to show for it and now June begins with rainy weather and the forecast for the next few days is the same thing and more of it. Don't think we're down and out. We're not. If we can get our feet on dry land within the next week or so, Maine may even yet make an acceptable showing. If any agent has a formula for making farmers stand in the rain in water up to their knees and pull Ribes, send it to Maine.

June 6. S. D. Conner - Maine

TRACTOR USED IN ERADICATION WORK AT NEWARK, N.Y.

I was of the opinion that some tough problems in eradication had been encountered in the Adirondacks, but a situation was faced in the clean-up of the environs of the Jackson-Perkins Nurseries at Newark, N.Y., that called for a different mode of attack from that usually used. A marshy piece of land of about one and one-half acres jutted into the nursery property. Here was a mass of wild black currant bushes, six to eight feet in height, intermingled with willow and alder. Man power was out of the question and when horses were hooked onto the bushes, they floundered half way to their bellies in the mud. A tractor at the end of four lengths of log chain was finally pressed into service, and the entire area was cleared of every bit of brush and along with the brush came the Ribes. Only eight hours were requiredto do the job which would have been impossible without the tractor.

C. E. Baker - New York.

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WELLESLEY STUDENTS TO VISIT LOCAL INFECTION AREA

Agent Brockway reports a very interesting visit at Wellesley College, during which he interviewed Professor Howard of the Department of Botany. Miss Howard was desirous of locating specimens of infected pines to show to her class in Botany. The infected trees discovered on the Hubbard Estate in Wellesley last winter were found to be fruiting and arrangements were therefore made whereby the class is to visit the area and study the aecial stage of the blister rust as it appears on growing trees. Professor Howard is very much interested in blister rust control and remarked that she located infections in Washington and Oregon last summer, and notified the authorities at that time.

E. M. Brockway - Mass.

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ANOTHER SCHOOL FOREST STARTED

School Boys Destroy Ribes to Protect Their New White Pine Plantation

Estee Grammar School, located at Gloversville, N. Y., has started its school Forest this spring with an initial planting of 10,000 trees, red pine, white pine, and Norway spruce. The use of 100 acres of county land has been given the school by the Fulton County Board of Supervisors.

The older boys of the school furnished the labor for planting the trees under the supervision of County Agricultural Agent C. H. Fullagar, and are now spending Saturdays in their school forest as Ribes pups under Hound Hare. (In other words, locating and destroying the wild currants and gooseberries.)

J. W. Charlton - N. Y.

BLISTER RUST NEWS FROM THE HUDSON VALLEY

Nursery Sanitation.

Nursery Sanitation is going forward in Westchester County. Some sizable plantings of currants are being found close to nurseries handling white pine; these make a vexing problem.

Black Currant Eradication.

Eradication of the black currant was started in Westchester County, May 21. Every home was visited and a careful watch for abandoned houses and old farm sites made. At present two men are engaged in this work. To date, quite a few bushes have been found, some of them in a neglected state of cultivation. All currant bushes in gardens are examined, since it is found that blacks are apt to be growing in the same row with the reds. At one place there was found a black and red growing together. The owner was present when they were taken out and was told that two separate root systems would be found. He was somewhat skeptical, but when the bushes came out he was convinced that these men knew black currants from red ones.

Boy Scout Work.

On May 12 about 40 Boys Scouts of Dutchess County put in a busy afternoon planting trees at their camp at Salt Point. None of them had ever done any tree planting before. About one-third of the species planted were white pine. The boys worked hard and apparently enjoyed their work. They have about 100 acres which they intend to reforest in the next few years. Agent Strait, who was in charge of the tree planting, promised the boys that at some later date they would have a chance at pulling gooseberries and currants, which would very likely be found along the old fence lines, and perhaps through the woods.

Window Displays.

During the second week in May, ten window displays of blister rust showing the fruiting stage on pine were put in stores in northern Westchester County. Posters and folders were also placed in the displays.

Needle Rust on Red Pine

While scouting over some plantings recently a peculiar condition was discovered on the needles of red pine (*P. resinosa*). A specimen was sent to Dr. H. H. York at Albany, and he reported it to be golden rod rust (*Coleosporium solidaginis*).. Some of the young pine were heavily infected with the fungus, but Dr. York says it is nothing to be alarmed about. It was new to me and for a while I had serious thoughts over the future of this species.

H. H. Strait - New York.

WILL SHEEP EAT GOOSEBERRIES?

Quite a bit of discussion has been carried on in the past few issues of the Blister Rust News in regard to sheep and gooseberries. Perhaps the following would be of interest on this topic.

There is one pasture in Somerset County, Me., that has been used for the purpose of pasturing sheep for at least the past three years. There are many gooseberry bushes growing in this pasture. They are thrifty and show no browsing down by sheep. There does not seem to be a single bush that shows any effect from pasturing to sheep.

Instances have been cited where cattle and goats have browsed down gooseberry bushes, but very few examples of sheep feeding on gooseberries have been given.

J. MacG. White - Me.

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NURSERY SANITATION WORK PROGRESSING

Good progress is being made in the work of removing Ribes from the vicinity of nurseries in Wayne County, N.Y. Within 1500 feet of the nurseries all Ribes are being removed, and if an agent wants to experience a lively time, just start removing Ribes from the back yards of city homes. Despite considerable opposition, most of the area has been cleared of all currants and gooseberries.

C. E. Baker - New York.

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MASSACHUSETTS COMMISSIONER OF AGRICULTURE VISITS BLISTER RUST INFECTION AREA

On May 15, State Leader Perry, accompanied Commissioner Gilbert and Director Allen to larch canker infection plots in Essex County. Advantage was taken of the opportunity to visit the blister rust infection area in the town of Newburyport. Conditions on Atkinson Common in that town are admirable to demonstrate damage inflicted by blister rust in white pine plantations. It was at this location that many of the early experiments in cutting off branch cankers were carried on. Conditions there today, demonstrate quite conclusively the futility of such practice as a general control measure.

C. C. Perry - Mass.

UNUSUAL RODENT FEEDING ON BLISTER RUST CANKERS IN MASSACHUSETTS

Reports this spring from many sections of Massachusetts, indicate that an unusually large number of blister rust cankers have been extensively chewed by animals of some sort.

The State Leader in a trip to the blister rust infection areas in Plymouth County on May 8, was particularly impressed with conditions in Agent Brockway's district. At the "Kittery Point" of Massachusetts in Pembroke, the greatest amount of feeding was noted. In the plots there, it is safe to say, that the fruiting area of the cankers has been reduced at least 95 per cent. One canker was noted on which an irregular area four feet long and with an average width of eight inches was completely eaten away. It is quite remarkable how the chewed area conforms to what we usually think of as the outline of the canker with the characteristic V at the top and bottom.

I have always been particularly interested in the Pembroke infection area, for the reason that I was shown my first specimen of blister rust at that point, back in the year 1919. While a great many trees there have died since that time, one tree that was most conspicuous in 1919, on account of the extensive production of aecia on almost every branch, still clings to life. The cankers on this particular tree, seldom "fruit" now, the bark having been almost completely crusted over by the repeated flow of pitch from the aecial wounds.

At the infection area in the town of Duxbury, aecia were not abundant and no feeding could be found. This particular area is in a residential section, which may explain the absence of feeding in this instance.

Conditions similar to those prevailing at Pembroke apparently prevail in other sections of the State. In April, Agent Roop reported that there had been so much feeding at the Crane Plot in the town of Ipswich, in Essex County, that the painted numbers on the trees had been entirely eradicated by the feeding.

In the town of Westhampton, in Hampshire County, the State Leader visited a local area on May 11, in company with Agent Wheeler. Some feeding was noted at that point, although it was not nearly as general as in other instances.

It is rather interesting to note these conditions for heretofore, it has been our general impression, that feeding of this sort was most pronounced during the years of heavy snowfall. During the winter of 1927-28, the snowfall in the sections where the animals responsible for the feeding seem to have been the most active, was almost negligible.

C. C. Perry - Mass.

NOTE:-In Berkshire County, Mass., the so-called rodent feeding has been excessively heavy in some places. Most of this feeding has taken place during the fruiting season. Feeding was noted however in places during the entire winter.

W. J. Endersbee - Mass.

FIELD DEMONSTRATION CONVINCING

On May 29, I called on a truck garden owner in the town of Schuyler Falls to interview him in regard to cultivated black currants. During the conversation we naturally drifted to blister rust and it was discussed in all its phases. He did not believe a white pine was ever killed by the rust, and as a matter of fact, he was almost willing to wager quite a sum that I could not show him any damage done by it. I said, "If you will put a few hours of your time against mine, I will furnish a car and take you to a place where I can prove my statement." He agreed, so an engagement was made for Wednesday morning, May 30, at 8 a.m. I was at his home at the appointed hour, and we were soon on our way.

I took him to an area near Peru, N.Y., which has not been eradicated, and where blister rust is killing hundreds of white pine of all ages and sizes. At first he could not believe what he saw, but before we left he was fully convinced that gooseberries and currants spread blister rust to white pine, which he saw with his own eyes, were dead and dying.

By taking this man into the field and actually showing him the damage caused by the disease, I feel sure he will be a great help to me on the control work in his community. If we could get more people out, who underrate blister rust damage to white pine, I sincerely believe it would help cooperation to a large extent and it would give us more courage to meet doubting ones.

H. W. Halcomb - New York.

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FOUND - AN ESCAPED RIBES NIGRUM!

Located on Main Street, Warrensburg, N.Y., in the crotch of a large maple tree, nine feet above the ground. Apparently a fairly old bush, about 15 feet of live stem, several clusters of flowers. Height of bush about four feet. Tips of long, slender canes dead - apparently killed back last winter. No doubt about species.

A row of dilapidated R. nigrum occur in a vacant lot within 100 yards of this escape. Undoubtedly the source of seed from which this high specimen grew.

Have passed this bush many hundred times in the seven years I have been here, but until yesterday while returning from church, never bothered to determine its species. There are also several gooseberries growing high in our roadside shade trees here in the village.

A. E. Fivaz - N.Y.

REFORESTATION IN RHODE ISLAND ON THE INCREASE

The State Department of Agriculture pooled orders for over 60,000 forest tree seedlings for various individuals in the State this spring, under the authority given in the recent Forest Seedling Act passed by the 1928 legislature. About 20,000 of the seedlings were white pine. The small total number of trees ordered was due to the law being passed too late in the season for many to take advantage of it this year. However, all the orders were small and showed interest on the part of citizens to plant an acre or more here and there. Municipal water departments and others ordered thousands of pine directly from nurseries and it appears that with more time to place orders in future years and as interest develops, the Department will be able to place larger orders and obtain lower prices through collective bargaining in the future. The increase in reforestation in Rhode Island is gradually increasing the need for forest protection. It appears that the State blister rust control areas will have to be extended from time to time to meet the demands of the public.

A. W. Hurford - R. I.

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MISS THOMPSON VISITS SKYLAND, Va.

Miss M. A. Thompson, Junior Plant Quarantine Inspector, Washington Office, had a very enjoyable vacation from May 21 to June 7 in the Blue Ridge Mountains of Virginia. She stopped for three days at The Lodge at Skyland. This will be about the center of the proposed Shenandoah National Park. Some fine specimens of white pine were seen at The Lodge, while lower down on the mountain side white pine was fairly numerous. Miss Thompson noticed an abundance of wild Ribes among the pine, one of the species was probably R. rotundifolium.

While at Skyland, Miss Thompson indulged in some mountain climbing by ascending to the top of Stony Man, an elevation of 3600 feet.

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AGENT ENDERSBEE PLANTS PINE

Agent Bill Endersbee of Berkshire County, Mass., participated in American Forest Week by taking a week's annual leave and planting 20,000 trees on his lot in New York State. Bill now has 55 acres planted to white pine, red pine, Scotch pine, white and Norway spruce and European larch. He also has about two acres each of balsam fir and white cedar from natural seeding. Anyone having land to sell cheaply, communicate with Bill. He is ready to start another planting project.

C. C. Perry - Mass.

OBSERVATIONS ON SKUNK CURRANTS

In the towns of Brighton, Harrietstown, and Altamount, Franklin County, N.Y., there are plenty of skunk currants. Ribes eradication this year has been in progress about a week or so now, and skunk currants have been found on every property on which I have worked.

In Harrietstown, an alder swamp presenting the appearance of a solid mat of skunk currants, except for a slight intermingling of Calamagrostis, (reed grass,) furnished a full crew with material for a five thousand haul on one particular day. They ran about one thousand per acre. Density of crown cover was about 60 per cent. The cost was $1.00 for every 200 bushes uprooted. In this particular case the expense was warranted.

In Brighton, a hardwood area, with a density of crown cover approximately 85 per cent, had to be eradicated to protect some 60 acres of pure pine. A small wet run was the center of skunk currant population. In this type, between four and five thousand per day were pulled by a full crew, at the cost of $1.00 per every 250 bushes removed.

In the town of Altamount there are a great many bogs. I had never seen skunk currants growing in a typical Adirondack bog. Where there is a dense growth of sphagnum, Chamaedaphne, (leather-leaf), Ledum (laborador tea), and Kalmia (laurel), and a lack of any drainage, one would not expect to find skunk currants. Yet at a good thirty feet from the edge of the built-up land around the bog, I discovered a small isolated clump of skunk currants, apparently as thrifty as their spagnum and heath associates. The nearest currants were on high land on a side hill, well sheltered from the bog, 100 feet away. Nature's dictum has evidently no influence over the perverse skunk currant.

W. F. Pratt - N.Y.

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PINUS MONTICOLA INFECTED IN 1922 ON LONG ISLAND

While the above record is somewhat old, it has but recently come to light that western white pines from Mt. Ranier, Wash., were found infected in 1922 in the East. The tree upon which infection was found was brought East by Mrs. T. G. Strong and planted on her estate at East Hampton, L.I., close to some currants and gooseberries.

Ten branch infections were collected on this tree and sent to the Office of Forest Pathology, June 2, 1922, and were identified as white pine blister rust. The specimens are under Collection No. 38243 of the Office of Forest Pathology at Washington.

R. G. Pierce

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Agent S. V. Holden writes on May 24, "This has been a cold, late spring, but Ribes eradication is well underway in Vermont."

STUDIES OF RIBES ECOLOGY

A Tentative Schedule for Eradicating Ribes in Pine Stands of Different Ages and With Different Degrees of Stocking.

The paper on Studies of Ribes Ecology by Mr. A. E. Fivaz, given before the Thirteenth Annual Blister Rust Conference at Boston on November 28-29, 1927, and which appeared in the Report of the Proceedings of this Conference has been mimeographed as a separate. While the data on Ribes was taken entirely in New York State and the conclusions drawn by Mr. Fivaz are applicable particularly to that State, yet it is believed that the suggestions made are probably also pertinent to New England conditions.

As an indication of the contents of this paper, several paragraphs are given below:

I. Wild land (never cultivated or stumped)

B. Stands 10 to 20 years old.

1. Full stocked - Eradicate immediately, - no further work needed.

2. Partially stocked - Eradicate immediately, re-eradicate every 7 or 8 years until canopy closed or pine 15 years from maturity (next cutting)

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D. Stands 30-40 years old.

1. Full stocked - No eradication necessary.

2. Partially stocked

(a) Good advance reproduction - Eradicate immediately to protect reproduction and re-eradicate three years after cutting, then every 7 years until canopy closed.

(b) Slight or no advance reproduction - Eradicate just before logging, re-eradicate 5 years after logging and thereafter every 7 years until canopy closed.

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II. Reverted land (once cultivated or stumped for intensive open pasturing)

A. First rotation since cultivated conditions. - Eradicate stone walls, fence-rows, streamsides, cellarholes, and all islands of wild land included in cultivated tract, immediately to prevent further seed production, and protect from damage, such young pine as is in vicinity of these hazardous locations. Recheck after 7 years, these same places. No further work for probably 20 years or until following first logging. Cultivated land itself will not need eradication, unless near cultivated red currant source ($\frac{1}{2}$ mile), and then only if considerable young reproduction and favorable Ribes site (moist).

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Exceptions and Additions to (I) and (II).

A. Ledgy sites in heavy Ribes country. - Re-eradicate every 7 years until crop is 15 years from maturity and cutting.

H. Pastured pine areas. - Since the pasturing of timbered areas reduces the foliage (and probably root) competition of Ribes, and improves seeding conditions, such areas need more frequent attention than undisturbed wild lands. In such pastured types the dangerous Ribes are likely to be in protected places rather than in closely grazed openings.

Copies of this separate may be secured by writing Office of Blister Rust Control, Washington, D. C.

R. G. Pierce

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PRESERVED SPECIMENS OF BLISTER RUST ON PINE AID MAINE SCOUTS

Under date of June, Agent John MacG. White sends in the following news item which seems to be worth passing on. He writes: "I have equipped my scouts with a specimen of the blister rust in the aecial stage on pine. The specimen was put into a preservative solution and placed in a small olive bottle which is easily carried in the pocket. I also collected some of the spores that came from the blisters, and have placed them in a small bottle sealed with paraffine. These specimens are used when the scout is making interviews. I find that a concrete example, such as these preserved specimens, is of more value than an abstract description. The spread of the disease is the hardest thing for the cooperators in my district to understand.

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Displays of fruiting specimens of the blister rust in public places, along roadsides, and in towns seem to stimulate much interest. It is easier to bring the disease to the people than to take the people to the disease.

J. M. White - Maine

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Agent Richardson sent circular letters to pine owners in his district, including holders of natural growth or planted white pine. Practically the same letter was sent to each, a change being noted to suit the type of owner. To add weight to his statements, Agent Richardson cites the fact "that more than 500 individuals and concerns in New Hampshire have carried on control measures".

GODDARD MEMORIAL PARK, LATELY ACQUIRED BY RHODE ISLAND, PROTECTED FROM BLISTER RUST

White pine, growing on about 300 acres of the 500 acre Goddard Memorial Park plantation, was protected from blister rust when a five-man crew from the State Department of Agriculture scouted the entire area during the week ending May 12, and eradicated 6,013 Ribes. This number of Ribes included 4269 wild red currants, 1,674 wild gooseberries and 70 flowering currants. This scouting, started on May 7, commenced the season's Ribes eradication work in the State. The protection brought about by eradicating the Ribes in Goddard Park is greatly appreciated by the Metropolitan Park Commission in charge of this valuable plantation.

The State crew is now completing the scouting of pine areas in North Smithfield that were included this year in the State blister rust control area. After finishing work in this town the men will scout the township of Scituate. The Providence City Reservoir is located in Scituate and the eradication of Ribes there will mean protection for thousands of white pine planted by the city around the Reservoir.

A. W. Hurford, R.I.

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CREWS BEGIN WAR ON PINE BLISTER

Arthur J. Lambert Will Direct All-Summer Campaign to Save Bar Harbor Trees

The campaign to check the ravages of white pine blister rust in Bar Harbor for which the town has appropriated $2,000, began last Wednesday when Arthur J. Lambert, Federal Agent of Blister Rust Control, put his first crew to work at Canoe Point on Corniche Drive. It is estimated that the work will continue for about three months. It will be carried on by two crews consisting of three men and one foreman for each crew. * * *

This program owes its inception to a talk given before the Bar Harbor Board of Trade last fall by W. O. Frost who has charge of blister rust control in Maine.

* * * * *

Mr. Lambert will put an exhibit in the window of the TIMES office, so that the public may learn to recognize the affected pines and the Ribes bushes which spread the rust.

The Bar Harbor (Me.) Times. 5/25/28.

NOTE:-The Editor of the TIMES added a well-written editorial complimenting the town of Bar Harbor on its good judgment in starting control of the blister rust.

A STORY
OR
WHAT AL FOUND AT THE TOP OF OVERLOOK HILL

In making the assent of Overlook Hill the blister rust agent had ground away in second for a seemingly long time and now just before reaching the top there was a particularly hard climb. Bur-r-r went the change into first. The motor hummed, the wheels slipped then grabbed and shortly the nose of the car poked its way over the brow of the hill. "Last place in the world I would want to live" grumbled the agent to himself. "Takes more out of a car than all the pine on the whole hill is worth". Then he momentarily thought of the pecuniary seven cents a mile and scowled. The grade let up, the shift over to second was made and then for a few hundred yards in high and just around the curve stood the Johnson homestead. The agent knew it to be the Johnsons for, getting stuck in the mud there early in the spring had impressed this scene forcibly on his mind. At that time he had declared by all that was great and good that it was the last time he was every going to monkey around with Johnson.

But corn planting time had come around, the weather got balmy, the roads settled, and Al thought he would try Johnson once more, sort of feel him out, and pass the time o'day if nothing more. A brief call at the house was made to learn the whereabouts of Johnson and then the journey to the back field where he was harrowing for corn.

Two previous calls, the slow climb up the hill, and the trip to the furthermost field on the farm had all taken time and the sun had climbed well toward the zenith. To be exact it was 11:30 a.m. At the farther end of the field, slowly packing back and forth behind a pair of ancient horses, was Johnson. Now and then he could be seen to bend over, grasp the harrow by one of the teeth, give it a quick jerk upward and relieve a bunch of sods that were supposed to have been turned under in plowing. The sun was beating down. Dust was coming up in clowds behind the harrow and Johnson was in the midst of the cloud. He could be seen to give a violent slap with his hand about his head in a desperate effort to kill or scare the tiny black flies which were intent upon taking their mid-day meal from his eyes or perspiring forehead. The early breakfast had long disappeared and hunger was gnawing forcibly at his stomach. His thoughts were turning toward the dinner table. As he made the last turn back before unhitching he saw approaching him a man whose identity could not be disclosed at first. The man evidently was looking for him, heading to meet him in about the middle of the field. As he approached, the features were recognized as belonging to a certain blister rust agent named Al-somebody, his last name he could not remember.

"Nice day, Mr. Johnson", said Al, greeting him with an extended hand and a smile.

"About time", said Johnson, as he brought his team to a stop. "Late season, crops ought to be all in. Things go pretty slow up here with me somehow".

Various other remarks were passed regarding crops, roads and the like. "I was up this way, Mr. Johnson, and I thought I would drop in to see how you were getting along with your work. Thought maybe you would be thinking about pulling those gooseberries when you got your corn in. You dont want to neglect that nice stand of young pine of yours, you know. Twenty acres of pine like

yours will certainly be worth some money someday."

"Maybe it will to somebody", replied Johnson in a doubting mood, "but I will never live to see anything come out of it".

"But dont you want to protect it from disease for the childrens' sake? They will live to see it worth real money."

"Protecting that pine as you call it wont ever concern them much. Guess they will have to look out for themselves. That's the way I had to do."

It was evident that the hard forenoon's work and the gnawing hunger were getting too much for Johnson. Working on a rough old farm like this eking out a mere existence was none too good for a man's nerves and to tackle him at exactly this time of day was obviously bad business. So Al proceeded to withdraw in as gracious a manner as possible under the circumstances and hoped to himself the pines would all die and that he would never have to see him again. A thought struck him, however, as he turned to leave. "Say, Mr. Johnson, it just occurred to me may be you would like to sell that piece of pine to me. You say they aint worth anything. What would you take for them, land and pine as is?"

This came as a surprise to Johnson. "I'll sell you the whole farm", he said.

"No, I dont care for the farm, but if you want to sell the pine I would buy that, if we could get together on the price."

Here was a man who thought more of the pine than the rest of the farm. This began to open the eyes of Johnson and for the first time he got a view of it which he had never seen before.

"Do you really mean to say that you think more of that piece of pine out there than the rest of the farm", quizzed Johnson who now was evincing some real interest.

"I certainly do, and what's more if you want to sell I'll buy just as I said I would."

Johnson's head was hanging low, apparently in serious thought.

"Say young fellow, you have given me an idea of that piece of ground that I never had before. I always considered that field as the scum of the earth, not even good pasture, and that those old seed pine around the edge just naturally took pity on me and covered it up so I wouldn'tsee it. And here you come along and want to buy it. I still think you are fooling."

"Well, I am game enough to offer you $500.00 for it today if you want to sell", said Al.

Johnson chuckled as he looked at his watch and said, "It's noon and I'm hungry. Let's go to dinner. You are going to stay with me. I want the wife to know about this. She's always thought the same as I have about that land there. I want you to tell her about it."

Al agreed to stay. The children came home from school and they all gathered around the table. As they proceeded with the meal, a little picture was painted by one, Al the forest artist. He told of the apparent scarcity of timber that was bound to come in the next 50 years and that it was just such land as this that was to help meet the needs of the future timber supply and that those who held it would be lucky; how a beautiful young stand of pine would develop under a little thoughtful management, such as protection from blister rust, keeping stock from running in and perhaps thinning later on. By the time the children were grown up they would look with pride upon such a fine stand of pine and thank those who had the foresight to care for it properly.

Al soon left with a full stomach and an assurance that Johnson's pine would be protected "aplenty".

It was down grade all the way to the main road and the car slid along smoothly with a gentle purr of the motor. "Kind of nice country up in here at that," said Al to himself as he pulled on the old briar and headed for the next pine owner.

H. G. Strait - New York.

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WHITE PINE BEST TREE FOR UNDERPLANTING IN CONNECTICUT

In Connecticut the best tree for underplanting at the present time is white pine. This species is capable of enduring more shade than red pine and, though it is not as tolerant in this respect as the spruces, it outstrips them in height growth. When the pines attain a height of five or six feet the hardwoods may be removed without fear of the sprouts suppressing the pines. The gradual removal of the overstory if practicable, is better because it permits the sensitive tissues of the shade grown pines to become hardened to full exposure, otherwise sun scald may result. Another desirable feature of this method of changing the composition of the stand is that the white pines will be almost one hundred per cent straight; due to the fact that its common enemy, white-pine shoot weevil, does not like to lay its eggs on trees growing under shade. The insect prefers open-grown specimens only.

Alfred A. Doppel in Farm Forest Tree Planting.
Conn. Agri. Coll. Storrs, Ext. Bul. 118, Aug. 1927.

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PROGRESS OF BLACK CURRANT PROGRAM IN SOUTHEASTERN MASSACHUSETTS

During weather unfavorable to carry on the eradication of wild Ribes, black currants have been eliminated from the towns of Bridgewater, East Bridgewater, and Whitman in southeastern Massachusetts. As has been the case in other towns in that section, very few plants of Ribes nigrum have been found.

E. M. Brockway - Mass.

CONFERENCE ON WHITE PINE BLISTER RUST QUARANTINE

A conference is called by the Federal Horticultural Board at the United States Department of Agriculture, Washington, D. C., for June 27, 1928, for the purpose of considering the advisability of modifying the requirements governing that interstate movement of five-leafed pines and of currant and gooseberry plants on account of white pine blister rust.

Fifteen States have been designated by the Secretary of Agriculture as infected with this disease, namely: Connecticut, Idaho, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin. Five-leafed pines originating in these States are not at present allowed to be moved into noninfected States nor from heavily to more lightly infected ones.

The conference on June 27 will include discussion of the desirability and safety of the following proposals:

(a) That five-leafed pines be permitted wider movement from the generally infected areas of New York and the New England States into more lightly infected States when they have been raised from seed in a nursery free of Ribes (currant and gooseberry plants) and further protected against blister rust infection by a Ribes-free zone surrounding the premises.

(b) That Federal permits be issued for the interstate movement of inspected cultivated red and white currants, mountain currants, and cultivated gooseberry plants under the sole requirement that they be dipped in lime sulphur solution before shipment, discontinuing the present practice of requiring an inspection of the vicinity of the nursery.

(c) That the shipment of permitted species of currant and gooseberry plants from the infected States be discontinued at an earlier date in the spring than at present so as to make feasible the removal of the dormancy requirements for such spring shipments by limiting the movement of Ribes to the period prior to that which aeciospores are produced on the pines, and that slightly earlier fall shipment of defoliated plants be allowed.

(d) That the declaration of contents as now required for the shipment of blister rust host plants be eliminated. It is understood that all such packages must meet the conditions of permit and certification required under the quarantine.

It is anticipated that any changes adopted as a result of this conference will be announced in time to become effective for the fall shipping season.

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Agent Endersbee has circularized the cooperators in Berkshire County, Mass., this spring. He has "played up" the Ribes as weeds and has urged the pine owners to eradicate them as if they were the weeds in their gardens.

MORE PHENOLOGICAL DATA

Agent Brockway reports the first uredinia in Massachusetts. It was located on black currants in the town of Bridgewater, Plymouth County, May 21.

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Uredinia was found on skunk currants in Oakland, Kennebec County, Me., June 4, by Agent White. He also reports finding uredinia on the underside of wild gooseberry leaves in Skowhegan, Somerset County, on June 2.

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E. C. Filler, Supervisor in Charge of Eastern Work, reports finding uredinia on skunk currants, June 11 at Northwood, N.H.

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Arthur J. Lambert writes on June 11, "I found urediniospores on *Ribes hirtella* and *glandulosum* today, at Bar Harbor, Me."

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MASSACHUSETTS "RIBES HOUNDS" HAVE NEW OFFICIAL TITLES

As a result of a reclassification of salaries and titles, of all positions in the public service of the Commonwealth of Massachusetts, blister rust appointees in that State have had their official titles changed from Blister Rust Inspectors to Plant Pest Suppressor. What Ribes hound would be a mere Inspector, when he could be a Plant Pest Suppressor?

C. C. Perry - Mass.

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NEW USE FOR CUT FROM MISCELLANEOUS CIRCULAR 40

Agent C. S. Herr, Milford, N.H., has made good use of one of the cuts appearing in Miscellaneous Circular 40. This cut, which is figure 8 in the circular, shows a blister rust crew uprooting wild currants and gooseberries. Mr. Herr has used the cut as a post card. The cards have been sent to the pine owners in those towns in which the crews are working. The following appears beneath the illustration on the card:

"The blister work is now under way in your town.

You should come out and see the control methods used and become more familiar with this disease so fatal to valuable white pine growth.

The selectmen will inform you where the blister rust crew is staying."

MAINE'S GREAT PINES A THING OF THE PAST

Maine is called the Pine Tree State and three-quarters of its area still remains wooded, but the white pines of a century or more ago from which it derived its nickname are few and far between. They were a species of forest giants. Occasionally, lumbermen come across an old stump four, five, or even six feet in diameter and from time to time they find a massive log lodged in the bed of a stream, says the New York Times.

The first wharf ever built on either side of Portland Harbor was located at what is now known as Willard Beach. That was before the day of spruce piles and pile-drivers, so the construction was of cribwork. The timbers used were all white pine and spruce, laid upon one another and held in place by rocks.

Recently the course of a sewer pipe made it necessary to cut right through the centre of this early wharf, or its ruins, as they lay imbedded in the sand. As the workmen drove their axes into the blackened, barnacle-coated timbers, they were astonished to find the chips as white and solid as if from live wood. Yet they must have been submerged by the tides for at least 20 years.

An old New England proverb says that a man who cuts down a pine never lives to see it decay. A specimen is recorded by Michaux that was seven and a half feet in diameter, and another that was 180 feet high. In New Hampshire there is record of white pine that was 264 feet high.

Such monsters were plentiful in the days when Maine was joined to Massachusetts Bay Colony. England depended upon its ships; lack of timber resources made her turn to our stately pines. All trees that measured more than 24 inches in diameter at a foot above the ground were suitable for masts and were reserved for the royal navy and marked with the sign of the broad arrow.

From Boston (Mass.) Post of June 6, 1928.
Forwarded by Agent A. J. Lambert of Maine.

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FORESTRY DEMONSTRATIONS IN MERRIMACK COUNTY, N.H.

According to the Union of Manchester, N.H., three demonstration woodlot meetings were held this spring in Merrimack County, at Pembroke, Bradford, and Hopkinton.

Forestry legislation, blister rust control, white pine planting, pruning, weeding, and thinning were discussed by leading state authorities. About 60 prominent farmers and woodlot owners attended.

These meetings were arranged by Thomas J. King, blister rust agent in Merrimack County, in cooperation with Merrimack County Farm Bureau, the Extension Service and the state Forestry Department.

OFFICE COMMENT

WARNING AGAINST ACTIVITY IN POLITICS

Competitive employees, while retaining the right to vote and to express privately their opinions on political subjects, are forbidden to take an active part in political management or in political campaigns. This also applies to temporary employees on leave of absence with or without pay, substitutes, and laborers. Political activity in city, county, State, or national elections, whether primary or regular, or in behalf of any party or candidate, or any measure to be voted upon, is prohibited.

(Extract from United States Civil Service Commission Form 1892.)

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MEMORANDUM CONCERNING THE USE PENALTY ENVELOPES, ETC.

Gentlemen:

A memorandum bearing on the use of penalty envelopes, cards, labels, slips, etc., was recently sent to the heads of offices. At the request of the Post Office Department, this memorandum instructed that the return on envelopes used should contain merely the name of the Department and Bureau and Washington, D. C., with the usual penalty notice.

It has been found necessary to make a change in the matter of the penalty slips and penalty envelopes used in sending out publications, in order that the returns may be definitely and quickly traced to the office interested. Accordingly, the use of a rubber stamp on the lower left-hand corner of the penalty slip, containing the name of the office or its abbreviated form, is approved. This use, however, is definitely limited to publications, and is not intended to apply to correspondence. All penalty envelopes and penalty slips sent to employees in the field for distributing publications should bear only the office stamp, with no reference to the local field station, or local address of individual or his office. All envelopes sent collaborators or other cooperating agencies for their use should bear the office stamp, and not include any local address. It is desired that all envelopes returned for any reason come to the Washington office.

As stated above, no return address other than the name of the Department, Bureau, and Washington, D. C., are to be used on correspondence.

Very truly yours,

Wm. A. Taylor,
Chief of Bureau.

ADMINISTRATIVE NOTE CONCERNING OUTSIDE PUBLICATIONS AND ADDRESSES

In a recent circular issued by the Director of Information, attention is called to the requirements of the revised administrative regulations that carbon copies of all articles or written addresses bearing upon the work of the Department should be forwarded with the article for which outside publication or delivery is desired. When an article or address is published and that fact is recorded in the Official Record, the carbon copy will be returned to the originating bureau.

The Director of Information has made the following comments with reference to this procedure:

> "The reason for this procedure is that both the Press Service and the Division of Publications of this office are interested in seeing copies of articles which are published outside the department. In that way the Press Service is aided in its publicity work and the Division of Publications receives information of benefit in handling other publications of the Department.
>
> "The approval of the originating Bureau will be obtained before any articles written in the Press Service are released to the press. Many articles prepared for outside publication contain material which should get to the general public about the same time that the article is published. We shall be careful, however, to preserve the confidential character of the material until it is published."

It will facilitate the prompt handling of articles for which outside publication is required if the original and carbon copy are forwarded simultaneously to the Office of the Chief of Bureau. Wherever it is desired that press release regarding the subject matter of an article be delayed until after the appearance of the article, it would probably be advisable to add a statement to that effect in the note requesting authority for outside publication.

Wm. A. Taylor,
Chief of Bureau.

March 12, 1928.

NOTE:- The above does not apply to local news articles, etc.

J.F.M.

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Maine eradication season started this year in Sebago, Cumberland County, on May 10. Temporary agents are reporting for duty on the 10th and 14th. The season is about two weeks later than usual.

May 15.

S. D. Conner.

A M O N G O U R S E L V E S

"Long John" Schofield, who has been at George Washington University at D. C., for past year, dropped in at the Office to renew auld acquaintance. "Long John", who tips 6 feet 4 more or less in his brogans, used to be one of Al Fivaz' crew of investigators, and worked at Boston and the Washington Office in 1926-27.

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Miss Virginia Sargent left Washington June 7 for a two week's trip to Boston and Albany. Miss Sargent is interested in Humane Society work, and while on her trip conferred with officers of this Society.

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Messrs L. P. Gould, G. U. Walcott, T. H. Graham and R. S. Caruthers have been appointed agents to assist Mr. A. E. Fivaz in his investigative work at Warrensburg, N.Y.

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During the past month Mr. Wm. Guernsey and Mr. Percy B. Rowe have been appointed Junior Foresters at Spokane, Wash.

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Harry Pennington was transferred from the Office of Horticulture to the Washington Office of Blister Rust Control on May 16. He took the place of Jerry Fenimore.

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Dr. J. F. Martin left Washington June 15 for a short field trip to New York and the Lake States.

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Dr. L. H. Pennington, Forest Pathologist at New York State College of Forestry, Syracuse University, will take his sabbatical year away from his school duties, beginning July 1. He has been reappointed as Agent in this Office July 1, and will continue his study of the epidemiology of the blister rust.

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Agents E. C. Kenyon and Geo. A. Felch of the Spokane, Wash., resigned during the month of May.

AND THEY TOOK UP GOLF

Messrs. H. P. Avery and J. M. Palmer, and Miss Nell Harper of the Washington Office have taken up golf as their latest avocation. The game gets them up at 6 a.m., which is a good thing. Judging from appearances, knickers make the game.

Newman. Take Note!!

P U B L I C A T I O N S

Blister Rust

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Dixon, C. F. Prevention of sap stain in white pine. New Zealand Journal of Agri. Feb. 20, 1928, p. 118-124.

MacAloney, H. J. Mixed stands the best protection against white pine weevil. The Forest Worker, March 1928, p. 13.

Doppel, Alfred A. Farm Forest Tree Planting. Conn. Agri. Coll. Storrs, Ext. Bul. 118. Aug., 1927. Notes on white pine and blister rust p. 12, 13.

Cline, A. C. and E. D. Fletcher. Pruning for Profit as Applied to Eastern White Pine. Harvard Forest and the Massachusetts Forestry Association, March 30, 1928.

Downs, J. B. The Wood-Using Industries of Massachusetts, 1926. Harvard Forest, Petersham, Mass. 1928. Bul. No. 12, pp. 85, with numerous tables and graphs.

Newman, L. E. The Story of New Hampshire White Pine. New Hampshire Forests, Vol. V, No. 11, March, 1928. p. 1-3.

Petheram, H. D. Season for Sowing Red and White Pine Seed. Jour. of For. January, 1927, No. 1, pp. 56-61.

No. White Pine and Western White Pine

Woodward, K. W. Where can timber be grown commercially in the United States. Journal of Forestry, Jan. 1928.

From comparisons of the heights, densities of stand, and yields at 50 years, he comes to the conclusion that the redwood, Douglas fir, and eastern white pine and western white pine, and cypress hardwood regions are the only ones worth considering from the standpoint of rapid timber production.

BLISTER RUST NEWS

July 1928.

Volume XII Number 7

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 7 July, 1928

WHITE PINE ON WHITE MOUNTAIN NATIONAL FOREST PROTECTED FROM BLISTER RUST

During the month of May, the Editor, accompanied by Supervisor Ira T. Yarnall and Ranger Geo. E. Spinney, made an examination of white pine areas located in the Swift River valley, just north of the Sandwich Range. These lands had been examined in 1924 for currant and gooseberry bushes and more than 152,283 of these plants were destroyed that year. In order to determine the effectiveness of the work, and also to learn whether any re-growth had taken place, the Supervisor, Ranger and State Blister Rust Leader spent two days in carefully examing the territory worked by the eradication crew.

The result of this survey brought to light the fact that excellent work had been performed in 1924. Only a handful of skunk currant and but two gooseberry bushes were found, although the region inspected comprised several hundred acres. In practically every case where currants were located it was found that they had developed from broken-off stems.

While engaged in this work the Editor spent one night at the Forest Service Road Camp, situated at the upper end of the valley. Here he met forest guards, road foremen and many other men connected with the Forest Service. If anyone doubts that these public servants have not a man-size job on their hands, then in that event, they should spend an evening at headquarters and "listen-in" on the conversation pertaining to the work of the past day and what is "on the books" for the morrow.

Furthermore, if there is any aspirant in the Granite Statefor honors or records in cross-country running, and desire to secure a little training, the Editor would recommend that such a person get in touch with Ranger Spinney and arrange to follow him for a day or so through the woods and hills of the National Forest.

L. E. Newman in
New Hampshire Forests. June,1928.

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SHEEP COST AGENT HARPP A COOPERATOR.

Do sheep effectively eradicate Ribes? In the opinion of Judson Bevins, a pine owner of the Town of Hague, Warren County, N. Y., they do and make a good job of it.

Agent Harpp had Mr. Bevins lined up for Ribes eradication, but Mr. Bevins advises, this spring, that he has been grazing sheep on the tract for about three years and that the sheep have completely devoured the Ribes; hence there is no need of going to the expense of having men cover the area. He also feels that repeated grazing has so completely killed the Ribes that they will not sprout from the roots.

The area in question is stocked with scattering pine over a pasture area and the Ribes are, or were, rather abundant. Agent Harpp has not yet inspected the area, and does not wish to go on record as advocating eradication by the "sheep" method, but he is anxious to hear from other agents on sheep or goat eradication experiences.

Perhaps some experiments with sheep or goats might develop some well trained herds which, with proper supervision, would perform efficient eradication at low cost. Shall we train our foremen for shepherds of Ribes hounds?

N. H. (New York)

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FIRE PERMIT TO BURN RIBES

Agent Harpp also reports that a cooperator in the town of Luzerne had such large Ribes and in so great abundance that they had to be pulled by a horse. This is not a new experience, but since the stand was pure pine there was no place to hang the bushes and it was necessary to pile and burn them. To do the burning required a permit from the local fire warden.

N. H. (New York)

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FOUR WILD RIBES SPECIES IN 50 FOOT RADIUS IN MICHIGAN

Found one location in Clare County just north of the town of Farwell that was producing four species within an area about 50 feet in radius. Species seen were R. triste, R. americanum, R. glandulosum, and G. cynosbati. This was the first skunk currant that I had seen in Michigan although I was informed that it was well known in the low grounds of that region.

D. J. Stouffer - Mich.

FOREST PLANTING IN NEW HAMPSHIRE - SPRING OF 1928

The planting of waste and cut-over lands this spring by the State, towns and individuals was unusually handicapped by adverse weather conditions. Reforestation was commenced on State lands April 20, and even at that late date frost was observed in many locations. Up north spring was even more reluctant to make its appearance, for on June 7, at the head of Echo Lake, in Franconia Notch the planting crew found frozen roots and in setting out trees dug up large lumps of frozen earth.

About 290,000 young trees, mostly white pines, were set out on nine State Forests. The reforesting of these State Tracts was made possible by a transfer of monies from the Contingent Fund of the Governor and Council. On such areas as were planted to white pine, proper protection from blister rust is being given by the removal of currant and gooseberry bushes.

New Hampshire towns and cities, to the number of 30, were given 246,000 free trees for planting on publicly-owned lands. Individuals, including 4-H Clubs, planted about 622,750 trees. No doubt the general business depression throughout the country was a factor in the falling off in the demand for forest planting stock.

L. N. Watson in
New Hampshire Forests. June, 1928.

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CONFERENCE HELD TO CONSIDER REVISION OF QUARANTINE 63

A conference was held in the National Museum, at Washington, D. C. Wednesday afternoon, June 27, to consider the revision of blister rust Quarantine 63. It is too early as yet to make any statement concerning provisions of this quarantine which may be revised. A number of the State men interested in blister rust control were present, among them being Mr. M. L. Dean of Idaho, Dr. W. A. McCubbin of Pennsylvania, Mr. H. L. McIntyre of New York, Mr. W. C. O'Kane of New Hampshire, Mr. E. G. Rex of New Jersey, Professor A. G. Ruggles of Minnesota, Mr. Lee A. Strong of California, and Mr. B. D. Van Buren of New York. Mr. S. B. Detwiler presented the blister rust situation. Mr. R. A. Sheals discussed the various suggestions for modification of the quarantine.

PROTECTION AGAINST MOSQUITOES

When working in regions where mosquitoes or black flies are present, the following preparations are recommended by the Bureau of Entomology for rubbing on the exposed portions of the face and hands as useful in preventing bites:

Oil of citronella 1 part, vaseline 4 parts.

Oil of lavender or pennyroyal can be used in the place of the citronella and lanolin or pure lard can be used in place of vaseline.

PINE INFECTION LOCATED AT NEWMAN LAKE, WASHINGTON

Some time ago our enemy made a sortie from his consolidated position, carried out one or more forced marches to the very edge of the battle ground proper, lay quiescent for a period of entrenchment and development, then blossomed forth to the attack.

Which being interpreted, means that blister rust has been located on pines at Newman Lake, about 20 miles, by airline, northeast of Spokane on the western fringe of our commercial stands of white pine. As it has reached the fruiting stage, this infection center constitutes a serious threat to our white pine belt. The disease was picked up by the Educational Department on May 11, 1928, during the course of gathering material for the Sportsmen's and Tourists' Fair.

Upon the discovery of this infection, the entire personnel of the Western Office was sent out to scout intensively the adjacent territory. As yet, only the one infection area has been found.

In this area, 8 infected pines were located within 1/8 mile of one another, in an open, swamp type-growth, closely associated with abundant G. inermis and R. lacustre. On these 8 pines, 21 cankers were found, 10 of them being on one tree. These cankers are classified as follows:

Year Growth Infected	Fruiting Once	Fruiting Twice	Canker Dead
1923	1	1	
1922	1	14	
1921		1	
Unknown			3

This infection resulted apparently from an aecial hit in 1923. The source of the aecia is so far a matter of conjecture. Scouting is being continued by the office personnel until the commencement of the regular field work after which the activities of the scouting project will be centered in the Inland Empire region. It is hoped that the results of the summer's scouting will help to clarify the uncertainties as to the manner of spread of the disease to the Newman Lake area. In the meantime, let us theorize.

Western Blister Rust News Letter. May 15, 1928.

NEWS ITEMS FROM LOWER HUDSON VALLEY

In a mixture of white and pitch pine near Copake, Columbia County a saw fly has stripped most of the needles on the young pitch pine and is trying hard to acquire an appetite for the white. This unnatural condition was discovered by the Secretary of the Poughkeepsie Y. M. C. A. at their camp, and immediately called to the writer's attention. Interest in our forests is confined not only to men of the wide open spaces but to those of the cities who are bread winners under the glare of an electric light.

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Signs point to quite heavy weevil attack in this section again this year. So far the tender leaders have not begun to wilt but no doubt will start soon. Alfred T. Ogden of Kinderhook who has a fine young stand of pine but which showed heavy weevil infestation last year has his fighting spirit up and is going after them this year tooth and nail.

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We have learned in Black Currant Elimination work that:

Generally speaking, people are law-abiding citizens.
Women love currant jam.
Men love currant wine.
A man will give up before a woman will.
Men may own the real estate but the currant bushes belong to the women.
Dogs have sharp teeth and a policeman will answer an emergency call.
And as the season advances I think we have a lot to learn.

H. G. STRAIT, - New York.

NEW HAMPSHIRE NOTE

The control of the white pine blister rust has been carried on by New Hampshire towns and cities in a greater volume than elsewhere throughout the New England States, yet, only the other day, we heard of one town in The Granite State that offered as an excuse for failing to continue this important work, that "a pine lot was cut-over last year in which blister rust control has been carried on." Ye Gods and little fishes! are the members of the white pine blister rust organization such Clairvoyants that they can forecast a year in advance the woodlots that are destined to be logged?

New Hampshire Forests. June,1928

RHODE ISLAND PUTS OUT NEW CIRCULAR AND POSTER

A four page pamphlet entitled "The Black Currant Menace" and a twelve by seventeen inch black currant poster have recently been published by the Rhode Island State Department of Agriculture for educational use in its campaign toward the eradication of the cultivated black currant.

The cultivated black currant was declared a public nuisance in Rhode Island on April 1 of this year by the Commissioner of Agriculture, Harry R. Lewis, after field studies proved that this nuisance-plant is a very susceptible host plant of the rust in Rhode Island and is generally diseased during the late summer season.

The pamphlet, "The Black Currant Menace" gives information showing why this plant hastens the spread of blister rust, how it can be identified by characters listed in a table, the necessity for the possession of cultivated black currants being declared illegal and its negligible importance compared with Rhode Island pine. Front page photos showing a cultivated black currant and dying white pines were used through the courtesy of the Massachusetts State Department of Agriculture who have used the photos in a similar bulletin. A valuable white pine crop at Goddard Memorial Park, Warwick, Rhode Island, protected from blister rust, is pictured on the fourth page with an appeal for cooperation in the protection of white pine through black currant eradication.

The poster printed by the Department gives a warning that the possession of cultivated black currants is illegal and brings out the reasons for control of, as well as the regulation against, these plants. This poster is being sent to all granges, post offices, offices of the town clerks and other places in the State in an effort to post it so that it will have the greatest educational value possible in spreading knowledge of the regulation and in appealing for cooperation.

The writer will be glad to forward a copy of the black currant pamphlet to all persons interested insofar as the supply allows.

A. W. Hurford
(129 State House, Providence, R. I.)

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A recent issue of THE SATURDAY EVENING POST contained an advertisement stressing the fact that one home in Dixie has survived for 200 years or more because it was built from Cypress. Although we are continually scanning many magazines and newspapers, we fail to find any mention of the several hundred, yea, even thousands, of New England homes, ranging from 100 to 300 years of age, that owe their present excellent state of preservation to the fact that they were constructed from a certain tree, native to the Northeastern States, to-wit: WHITE PINE.

New Hampshire Forests. June, 1928.

PINE INFECTION IN OREGON

On May 30, blister rust was found by Mr. L. N. Goodding on two white pines about two miles east of Palmer in Multonomah County, Oregon. Scouting in the limited amount of white pine in this vicinity failed to locate any more infected trees.

One tree had one canker, the other had six. All of the cankers but one were on 1923 wood. The one was on 1922 wood. All of the cankers fruited for the first time this year.

Both infected trees were in close association with R. bracteosum. No infection was evident on the R. bracteosum at that date but will probably appear later even though the cankers were all cut out.

The locating of this pine infection brings the blister rust threat much closer to the sugar pine of southern Oregon. Intensification of the rust on pines in the Mt. Hood region will be followed by a wave of the disease extending farther to the south in the Cascades. We hope that this pine infection is, or was, the only one in Oregon. The nearest known pine infection to this, is at Spirit Lake, north of Mt. St. Helens. It seems that the time of a scouting crew might well be spent in southern Washington to determine more accurately the position of the enemy.

Western Blister Rust News Letter.
June 15, 1928.

ADVENTITIOUS BUDS ON WHITE PINE

Some observations on the growth of adventitious buds of northern white pine (P. strobus L.) were made 5/25/28, in the District of Columbia, which may be of interest to blister rust workers.

Tree #1. 8 feet in height.
16 new shoots from adventitious buds appeared on the internodes of 1924 growth.
6 new shoots on 1923 growth
8 new shoots on 1922 growth
6 new shoots on 1921 growth

Tree #2. 7 feet 6" in height.
5 adventitious buds were seen at base of 1927 growth.
1 bud on 1926 growth
3 buds at base of 1922 growth

On June 14, a second observation was made. At this time both trees seemed to be in a healthy condition, the new growth ranging from 10 to 12 inches in length. Tree #1 at this date had dropped all needles of 1926 growth and earlier, and most of 1927 growth. Tree #2 which had less adventitious growth retained many needles of 1926 origin and a few even of 1926.

R. G. Pierce.

LIBRARIAN DESIRES BLISTER RUST PUBLICATIONS

A letter from Mr. A. E. Fivaz, Warrensburg, N. Y., July 9, informs the Office that the Librarian of the Warrensburg Public Library could use a collection of blister rust publications to advantage. Needless to say these were promptly forwarded

The above suggests the advisability of having a set of blister rust publications in our Public Libraries, especially in those States where blister rust is present. The Editor knows that some of the earlier publications on blister rust were sent to the Public Libraries in the infected States.

R.G.P.

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RE-ESTABLISH ORIGINAL FOREST.

An interesting forestry project has been started near Auriesville, Montgomery Co., N.Y. on an eight hundred acre tract belonging to the "Shrine of our Lady of the Martyrs". This shrine, a religious and educational institution, was established some few years ago and helps to keep alive the memory of the early Jesuit missionaries who were massacred by the Indians early in the seventeenth century. The site near Auriesville was chosen because of its historical importance as evidenced in the early Jesuit writings.

Father Francis Byrne, now in charge of the Shrine, plans through a program of forest management and reforesting to reconstruct the original forest, as nearly as is possible and practical, as it existed when three Jesuit missionaries were martyred there on the outskirts of the old Indian village. The weekly itinerary reports which were sent in to the mother church some three hundred years ago, told not only of the work of the missionaries in the field, but also described the natives, the geography, and the character and type of the timber.

With this description of the topography and timber types as a basis, Father Byrne has protected some of the white pine in the valleys and slopes from the Blister Rust, plans some more Ribes eradication work for this season, and is planting the uplands to Spruce. An initial planting of 10,000 spruce was made last year, which will in all probability be kept up each year until the project is completed.

June 26, 1928 J. W. Charlton - N.Y.

BLISTER RUST AND THE BOY SCOUTS

There has been much trouble in some districts in securing labor at a reasonable wage for Ribes eradication work. This problem has been solved by W. S. Codman who has charge of the Sullivan county district.

Mr. Codman on becoming acquainted with Mr. Worth, Scout Executive of Sullivan county, told him of the trouble he was having, and now has up to one hundred scouts at his disposal at any time. These boys receive two dollars a day and board themselves. It was agreed that on many of the jobs the boys were to camp out under the supervision of the foreman who may or may not camp with them.

In this way the boys will receive some training in forestry practice and blister rust control, and at the same time be camping and earning money. Thus the agent secures sufficent labor; and the knowledge of the dangers of blister rust is spread to many homes through the boys.

Harold E. Blanchard - New York

CONVINCING SOME DOUBTING THOMASES

Down at Boothbay Harbor, Maine, the town foreman was asked,

"What do you do to fight the Blister Rust, and what do you fellows spend your time in the woods looking for?"

The alert foreman replied,

"Now listen brother, there is no better way for you to find out than to come with us some day and find out for yourself what we are doing. You can help pull some of these gooseberry bushes and skunk currants which spread the Rust."

"Oh Posh! there is no sech thing as skunk currant", replied the native. "Whoever heard of sech bunk."

"Oh Well!" replied the foreman,"We won't argue about it, but you just watch for me when I come back tonight and I'll prove to you what skunk currants are."

That night the foreman was seen parading through the streets on his way home from work, with the rear of his car loaded with skunk currants and with these signs tacked on his car--"Skunk Currants, Blister Rust Control." He finally deposited his load in front of his garage for further inspection by the doubting Thomases.

G. H. Kimball. Me.

NOTES FROM CALIFORNIA

G. A. Root

The field season in California opened in late May, when the control reconnaissance camp was established and work started near Quincy in the Plumas National Forest.

The local control camp was set up near Dorrington in the Stanislaus National Forest and some preliminary work done prior to June 1.

Frank Patty started his ecological work on Ribes about June 1. The first of the studies will be conducted near Strawberry in the Stanislaus Forest, the site of the 1927 local control project. This is favorable ground for such work because of large areas of cutover land.

The black currant eradication work started June 1, with one man in Kern County. This is about the southern extremity of the range of sugar pine in the Sierra Nevadas. Five other men were to report for work on June 15th and 22nd respectively, their activities to be centered in several of the coast counties.

Extract from Western Blister Rust News Letter of June 15, 1928

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BLISTER RUST CONTROL APPROPRIATIONS

For Fiscal Year 1929

The last Congress passed appropriations for the Department of Agriculture which included an item of $445,020.00 for the work of the Office of Blister Rust Control for the period July 1, 1928 to June 30, 1929.

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A WORD OF APPRECIATION

Miscellaneous Publications 22 and 23, the new illustrated circulars which have been issued to replace Miscellaneous Circular 40, seem to have made a hit in the field, for the following note has just been received from one of the agents in Maine: Dr. Martin is to be congratulated on the Miscellaneous Pubs. 22 and 23. The size is very good for mailing purposes. The photos are exceptionally good also.

17,579 BLISTER-BREEDING PLANTS DESTROYED

MEN WORKING TO SAVE WHITE PINES HAVE COVERED 1,000 ACRES--HAVE HAD HEARTY COOPERATION FROM LAND OWNERS

Pine blister rust is the bitter enemy against which a war has been waged the past six weeks in this locality, under the direction of W. O. Frost, in charge of blister rust control work in the State of Maine, and supervised by Arthur J. Lambert of the State Forestry Department, Agent of Blister Rust Control. This is cooperative work in which the Government, the state and the town of Bar Harbor are engaged this season, the town having appropriated funds for the work at the annual town meeting. Mr. Frost was here last winter and showed the ravages of the dread pine scourge in his illustrated lecture before the Board of Trade.

The section worked thus far is 1,078 acres, and the work has been entirely devoted to eradication of the cause, that being the purpose for which the appropriations are made. And this cause is the presence, from a few feet to a quarter of a mile from the tree threatened, of Skunk Currants, wild and cultivated Red Currants and Gooseberries and Flowering Currants or Clove bushes.

The eradication of the pest-bearing bushes and vines throughout this area has been thorough and the roots have been destroyed. The acreage fought over, the work beginning on May 16 and lasting, thus far, to June 30 includes that on both sides of the road from Hull's Cove to Schooner Head and in neighboring sections. In this acreage 10,644 Skunk Currants, 2,213 Wild Red Currants, 3,940 Wild Gooseberries, 354 Cultivated Red Currants, 202 Cultivated Gooseberries and 26 Flowering Currants or Clove Bushes have been destroyed, a total of 17,579 plants which bear white pine destroying disease. ********

From The Bar Harbor Times, - July 4, 1928.

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TOWNSPEOPLE OF LEBANON, N. H., URGED TO VISIT AREAS WHERE RIBES ERADICATION IS BEING CARRIED ON.

Blister Rust Control Agent Geo. F. Richardson, Jr., of Lebanon, Grafton County, urges each and every voter to go into the field to see blister rust and the method of controlling it, as well as seeing first-hand how the town money is expended. Lebanon voted $1,000 at the last town meeting for this work in co-operation with the State Forestry Department.

This is the gist of a 9 inch article appearing in a local New Hampshire newspaper.

IDAHO FOREST EXPERIMENT STATION ORGANIZED.

Program includes investigations relating to control of white pine blister rust.

The School of Forestry of the University of Idaho announces the organization of the Idaho Forest Experiment Station as an independent division of the university. The station is composed of a forest research laboratory, the 640-acre experimental forest in Moscow Mountains which the university has been using for several years, and the university arboretum and forest nursery. Francis G. Miller, dean of the school of forestry, is director of the station, and Prof. Ernest E. Hubert has charge of the laboratory.

The initial program of the station includes several research projects which the school has had in progress for a number of years. These are a study of Inland Empire Ribes in relation to blister rust control (under way two years); a study in the rate of growth and future yields of western white pine which has come in on old burns in northern Idaho; and a study of the effect of logging on the growth and form of residual species in the western white-pine type of Idaho (under way four years).

In announcing the establishment of the forest experiment station Dean Miller calls attention to the exceptional importance of forest industries in Idaho. About 20,000,000 acres of the land in the State, or about two-fifths of its total area, is classed as forest land, and of this acreage about 48 per cent still bears commercial stands of timber. The annual lumber cut is about 1,000,000,000 board feet. The State's timber industries have a valuation of $100,000,000, and their products are valued at $41,000,000 a year.

From Forest Worker, May 1928.

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ROADSIDE DEMONSTRATIONS

Writing on July 12, from Albany, N. Y., Mr. George E. Stevens, formerly on blister rust control work and now Exhibit Specialist with the N. Y. Conservation Department, says: Yesterday completed putting in a roadside Blister Rust demonstration near Eldred, down in Sullivan County. Believe me, these roadside demonstrations surely attract attention.

Edit. We hope some day to have an article by Mr. Stevens on putting on a roadside demonstration, the factors that influence a good one or a poor one, etc.

PLANT QUARANTINE AND CONTROL ADMINISTRATION

The following is from the "Message of the President of the United States transmitting THE BUDGET for the service of the fiscal year ending June 30, 1929:"

It is proposed to establish in the department a unit to be known as the Plant Quarantine and Control Administration to conduct the work of enforcement of the plant quarantine act and regulatory activities of the department relating to the control and prevention of spread of diseases and insect pests of plants and plant products. It is proposed to transfer to the new administration the present regulatory activities of the Federal Horticultural Board, that portion of the work of the Bureau of Entomology pertaining to the control and prevention of spread of insects and the maintenance and enforcement of quarantines on insect pests, and that portion of the work of the Bureau of Plant Industry pertaining to the prevention of spread of the white blister rust.

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The above recommendations have been approved by the last Congress, and beginning July 1, 1928 the Plant Quarantine and Control Administration will carry on the inspection work in connection with the enforcement of blister rust quarantine 63.

Messrs. R. A. Sheals, J. M. Corliss, C.R. Stillinger and Misses M. A. Thompson and V. W. Sargent, who have been engaged in blister rust quarantine work will be transferred to the Plant Quarantine and Control Administration.

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BLISTER RUST AHEAD

Miss Virginia W. Sargent of the Washington Office, on a recent trip from Albany to Boston via bus over the Mohawk trail had occasion to impart a bit of official information on the blister rust. Remarking to the driver on the beauty of the white pines on the way and that she was from the blister rust headquarters, he inquired "What is this blister rust? I'll show you a sign a little farther on that reads 'BLISTER RUST AHEAD'. This sign is near a lunch counter and I figured out it was something new to eat."

"It certainly is not," replied Miss Sargent, "but I'll try to tell you a little about it so that you can possibly interest other inquirers." On the way back to Albany a blister rust demonstration booth near the lunch counter was noted; no one was there at the time, but leaflets were for distribution at the lunch counter, one of which looked very familiar as our Misc. Circular 40. Miss Sargent on her return to official duty mailed some leaflets, including the quarantine and revised Circular 40, to the bus driver.

COMPTROLLER'S DECISIONS

Where articles scheduled by the General Supply Committee were purchased in the open market by a field service of the Department of Agriculture and there appears no showing sufficient to establish that an exigency existed at the time of purchase which could not have been met by purchase from the regular contractors, the transaction was in contravention of the provisions of the act of June 17, 1910, 36 Stat. 531, which provides the procedure for making such purchases, and payment may not be made therefor in excess of the regular contract list price.

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The act of March 1, 1919, 40 Stat. 1270, requires all blank book work for Congress, the Executive Office, the Judiciary, and every executive department, independent office, and establishment of the Government, to be done at the Government Printing Office, and such must be the procedure notwithstanding any contract for the purchase of such supplies from a private individual or firm.

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The purchase of reprints of magazine articles prepared by employees of the Government in their official capacity is a procurement of printing of official matter in contravention of the act of March 1, 1919, 40 Stat. 1270.

Claims for the purchase price of reprints of magazine articles prepared by Government employees will be allowed only upon a clear showing of fact that such articles were prepared by such employees as private individuals and not officially, so that the Government has no proprietary interest therein and no control over the right of publication.

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An appropriation not available for the purchase of newspapers may not be used to purchase a yearbook under an arrangement by which a year's subscription to the United States Daily is to be given as a premium with such purchase.

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Where an employee of the Government purchased gasoline for authorized use on official business in a State that imposes a tax upon the dealer or distributer, the Federal Government may reimburse him for the full amount paid inclusive of the tax. The matter of refund of the tax so paid is for the attention of the department concerned and not the employee.

Reimbursement of the amount of tax alleged to have been paid by an employee of the Government on gasoline purchased for authorized use on official business in a State where, under present practice, no tax is collected upon liquid fuel sold or delivered to the Federal Government for actual consumption in the business of said Government, is not authorized.

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The various processes of producing "prints or cuts" for loan to newspapers for use in illustrating articles to be published in connection with the work of a department, while relating to the art of printing, do not constitute printing within the meaning of the act of March 1, 1919, 40 Stat. 1270, requiring all printing to be done at the Government Printing Office, and such "prints or cuts" may be procured elsewhere by contract entered into in accordance with law.

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The field personnel of the Public Health Service payable from the appropriation for "Pay of Personnel and Maintenance of Hospitals", having been classified pursuant to the act of December 6, 1924, 43 Stat. 704, it is not permissible to contract with such employees with a view to increasing their compensation by the payment of traveling expenses to their duty station, such additional compensation being in contravention of section 2 of the act of March 2,1926, 44 Stat. 161.

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Reimbursement for an amount alleged to have been paid by an Internal Revenue employee in a travel status to the wife of another Internal Revenue employee for lodging is not authorized.

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Under a contract for the purchase of trucks by the Government, which stipulated for a deduction of cash discount for payment made within 10 days and for a deduction of liquidated damages for delays in delivery from any payment due or to become due the contractor, the discount is to be first deducted on the full contract price and the liquidated damages withheld from the balance due.

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Where bids were requested for the furnishing of a specified quantity of postage-stamp and internal-revenue paper for use of the Bureau of Engraving and Printing and the bidders were requested to submit bids quoting their prices both under the separate items and as a whole, a bidder may not withdraw his bid after the bids have been opened, but before award is made, on the ground of alleged mistake in that in submitting its bid it had intended to quote prices on the whole and not on a part of the contract.

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The purchase of a particular engine for use of the United States Coast Guard without compliance with section 3709, Revised statutes, is not authorized simply because the make of engine desired has been used over an extended period of time and found satisfactory and that it is a patented article and can not be

purchased from dealers in general, when the facts connected with the transaction do not disclose that the particular engine desired is the only engine that will in fact answer the purposes for which it is required. Experience with a particular engine does not justify excluding bidders offering other makes of engines.

The specifications on which bids are to be requested for gasoline engines to be furnished the United States should show the Government's requirements as to performance and the service conditions under which the engines are to be used rather than the mechanical construction of the engine, and the bid shown to be most advantageous to the Government must be accepted.

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Where a trucking company contracted with the Government to pack, crate, and deliver the household goods of a Federal employee from one station to another for a specified amount, and the goods were totally destroyed by fire while en route, a settlement with the owner of the goods does not constitute delivery within the terms of the contract, and the United States is not obligated to pay the trucking company for the packing and hauling of the goods.

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Where husband and wife maintain a common household supported from the husband's income, payment to the wife for stenographic services engaged by and rendered to the husband, a Government employee, is unauthorized, notwithstanding the wife may own real estate and other investments and have bank accounts in her own right.

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Where a claim is submitted to a disbursing officer of the United States and a voucher is stated for an amount less than that claimed, payment of an additional amount to the claimant is not authorized where the voucher is certified as correct and just and the amount stated thereon is accepted without protest.

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An employee who left his station on official business before 8 a.m. may be reimbursed, under paragraph 62, Standardized Government Travel Regulations, the expense incurred for breakfast taken after departure from his home or office, whether taken on the train or en route to the train.

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AMONG OURSELVES

Mrs. Alma Bishop Fivaz who has been taking a rest at her home in Washington for the past month was an office visitor June 26. We are glad to note that she has recovered her health and is feeling quite peppy. Al dropped into the office about the same time.

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Mr. Gilbert B. Posey recently promoted to Senior Pathologist left Washington for the west coast where he will spend three or four months on the control of the blister rust. While in the west his headquarters will be Spokane, Washington, 618 Realty Building.

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Mr.R. E. Myers who has been a collaborator of the office since July 1, 1926 has been appointed Agent, effective July 1, headquarters, Spokane, Washington.

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Mr. Chas. T. Geiser of the Washington Office left the city July 4 to assist Mr. Fivaz in his work at Chestertown and Warrensburg, N.Y.

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Miss Maude A. Thompson and Miss Virginia W. Sargent of the Washington Office have been transferred to the Plant Quarantine and Control Administration. Miss Thompson has been in the Office of Blister Rust Control since June, 1919. Since 1924 she has been Junior Plant Quarantine Inspector.

Miss Sargent has been a stenographer with the Office since June, 1924.

PUBLICATIONS

Western White Pine

Neff, Philip. The Inferior Species Problem in the Northern Rocky Mountains. Journal of Forestry. Vol. 36 No. 6, May, 1928. pp.591-599.

In this paper the author discusses the problem of the inferior species in the western white pine region of the Inland Empire. A chart on page 592 compares the cost of production and tree value of the inferior species, white fir and hemlock with the cost of production and value of western white pine, for diameter ranging from 8 to 38 inches. There is also a chart showing the spread in selling value between Idaho white pine and white fir and hemlock. While this spread was $14.40 in 1918 in favor of the pine, it has become $25.40 in 1927.

White Pine

Burns, G. P. Studies in tolerance of New England forest trees.--VII, Leaf efficiency in thrifty and stunted white pine seedlings. Vermont Sta. Bul. 267 (1927), pp.27.

Chittenden, A. K. and P. W. Robbins. Best White Pine Seedlings Follow Fall Planting. Michigan Station Quarterly Bulletin 10 (1928) No. 3 p.95-97, fig. 1.

Hutchinson, Ralph M. Farm Forest Planting. University of Maine, Department of Agriculture. Extension Circ. 95 April, 1927. White pine is one of the trees recommended for planting. Protection of white pine plantations from blister rust and from grazing of cattle is recommended.

Blister Rust

Hurford, A.W. The Black Currant Menace. Rhode Island Bureau of Entomology and Plant Pest Control Bulletin 3, May, 1928, 4p.

BLISTER RUST NEWS

August 1928.

Volume XII

Number 8

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 8. August 1928.

DEVELOPMENTS IN WHITE PINE BLISTER RUST CONTROL IN THE UNITED STATES

By S. B. Detwiler

Status of Infection by Regions

New England. The rust was introduced from 1897 to 1910 and intensified from 1910 to 1916. Accumulative damage to pines has been severe on unprotected or lately protected areas in the northern half of the white pine region. In the southern half of this region damage is light, as yet, due to sparse distribution of wild Ribes.

New York. Introduction took place 1900 to 1909, and intensification from 1909 to 1919. Damage is heavy in the pine region of the Adirondacks, and light damage has occurred in several additional counties in the northern half of the State. In the southern and western half of the State the rust is still in the very early stages of intensification.

New Jersey and Pennsylvania. Introduction took place from 1905 to 1909 on imported stock, and on local nursery stock in New Jersey up to 1916, but intensification was largely prevented by sanitation-cutting of pines. Since 1916 there has been some intensification of the rust in several counties in northern Pennsylvania. A survey in 1927, conducted through the public schools, shows that the rust has spread on Ribes throughout Pennsylvania and is established on native pines on the Cook forest in Clarion County. New Jersey, in 1927, had more infected Ribes distributed over seven counties than were found in any previous year, but no centers of infected pines have been found.

Southern and Central States. The blister rust apparently has not spread into Delaware, Maryland, Virginia, West Virginia, the Carolinas, Georgia, Kentucky, Tennessee, or in the Ohio Valley and central states. It is probable that the rust spread south of Pennsylvania in 1927, since rust was found in counties adjacent to Maryland and West Virginia. Scouting was very limited in these states in 1927 because of lack of funds for this purpose. Shipments of infected pines were traced and destroyed in Virginia in 1911, Ohio in 1910-11 and 1916-17, Indiana in 1910, Iowa in 1917, and South Dakota in 1917. No spread from these centers has ever been found.

Lake States. Introduction of the rust occurred in 1908-09, but at very few points. The disease was found on Ribes in 17 counties in Michigan in 1927, whereas it had previously been found only in two counties. The rust has now reached south to the Indiana line and north of Grand Rapids. In Wisconsin and Minnesota little scouting was done in 1927, but scouting in previous years shows that the rust is approaching the light damage stage in the southern half of the pine region in these states. Control work since 1917, done where centers of infected pines were found, has met with marked success in decreasing the rate of spread and establishment of the disease in the Lake States. This success is apparently due in part to the limited distribution of white pines in the infected territory, so that pine infection centers could be readily found and eradicated.

Pacific Coast States. The blister rust was introduced at Vancouver, B. C. in 1910, spreading rapidly to distant points, and has reached the heavy damage stage in the coast region of British Columbia. It is intensifying heavily on pines in the Olympic Peninsula of Washington, and is rapidly becoming established on northeastern and southwestern Washington. In northwestern Oregon, Ribes were infected in two additional counties in 1927, making a total of five counties infected since 1925. The rust has not yet been found in southern and eastern Oregon, nor in California.

Idaho and Montana. The rust was found for the first time in Idaho, in 1927, and also in the southeastern portion of British Columbia near the Montana line. These infections were found on Ribes, but the disease is in the intensification stage on pines over a large area in eastern British Columbia extending from Revelstoke to a point 30 miles north of Idaho. Blister rust infection appears to have first occurred in eastern British Columbia on *Ribes nigrum* L. (European or cultivated black currant) in 1917, through natural spread from the coast region. In 1927 the rust was very prevalent on cultivated and wild Ribes in the eastern part of the Province.

The long-distance spread of the rust from infected pines to *Ribes nigrum* was further proved in 1927 by finding the rust on cultivated black currants north of Prince George, 350 miles north of the established range of five-leafed pines.

Rocky Mountain States. White pine blister rust has not been found in these states south of northern Idaho. The five-leafed pines of this region are considered of secondary importance for timber production, though high in scenic value. Some foresters consider that limber pine has commercial possibilities in limited areas, and it has value for watershed protection. In view of these facts it would be well for the Rocky Mountain States to start educational campaigns to secure elimination of *Ribes nigrum*.

Extract from Journal of Economic Entomology,
Vol. 21, No. 3
June 1928.

EVIDENCE OF GOOD ERADICATION WORK IN NEW YORK

As a result of a visit by a member of the Plant Quarantine and Control Administration to an estate in New York and a request for information, there came to hand an unsolicited testimonial of good Ribes eradication, which is here given:

> "In regard to the pine rust pamphlets, I am very much obliged to you and beg to inform you that on my land in the Adirondacks or at least on the greater portion of it, I have had all the wild currants and gooseberries removed, so much so that this summer, in walking around the place almost daily for three weeks, I found not a single wild currant or gooseberry. The pine on my place seemed to be in splendid condition. As I understand it, these are the only hosts for the blister rust. I am very anxious to have my forest in good condition. I have planted a good many young trees and am watching for the blister rust disease."

R. G. P.

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BLISTER RUST NOTES FROM DISTRICT SEVEN IN NORTHERN MASSACHUSETTS

The weather during June has been very, very poor and a serious handicap to the progress of Ribes eradication in this district. The State foremen have, however, been kept busy on rainy days assisting with the preparation of signs and materials in connection with five of the large, heavy, semi-permanent type of roadside displays. During the early part of the month we cooperated with Agent Endersbee in placing a display at the Hair Pin Curve on the Mohawk Trail.

June 11, had a long interview with Chief Forester H. O. Cook of Massachusetts. The following day a conference was held with Commissioner of Conservation W. A. L. Bazeley, Chief Forester H. O. Cook, District Forester Fitzroy and Forest Ranger Brown. Mr. Bazeley spent two hours with me viewing infected pine as it appears in the Rowe study plot. Arrangements were completed to protect all of the state-owned pine in district seven and vicinity.

Blister Rust on pine has been found in practically every pine lot that we have visited in the town of Conway this month. A rather heavy spot infection area has been discovered in the southeastern corner of the town not far from the Deerfield, Whateley town lines. The number of infected trees in the small plot will number up to one hundred or more.

Infection on Ribes is especially abundant and general this spring.

G. S. Doore - Mass.

FIRST BLISTER RUST INFECTION ON NATIVE PINE IN MICHIGAN

Pine Infection at Indian River

While the blister rust has been known to be in Michigan since about 1910 when it was introduced on planting stock from France, it has never been found in the state on native pine, until July 10 of this year. Mr. J. M. Corliss while making a pine survey in Michigan, discovered the disease on 10 native white pine (*P. strobus* L.) at Indian River, Tuscarora township, Cheboygan County. This county is in the extreme northern end of the lower peninsula.

The infected trees which averaged 7 inches in diameter were on the property known locally as Constance Park, owned by Mr. F. E. Holden of Detroit. The blister rust cankers were probably five years old. Close to the infected trees was a large black currant bush which is believed to be partly responsible for spreading the disease to these pines. Adjoining Constance Park, a tract of 160 acres, is the Michigan State Park with an area of 300 acres. Restocking of white pine from 0 to 5 inches D.B.H. in these parks will average 35 per cent. Ribes found growing within and around these two parks include *americanum*, *glandulosum*, *cynosbati*, and *hirtella*, the predominating species being *R. americanum*.

Blister Rust Publicity

With the assistance of Mr. E. C. Mandenberg and Mr. D. J. Stouffer a blister rust exhibit was placed in the store window of Mr. Martin, local merchant. This exhibit attracted much attention. A special article concerning the discovery of the blister rust on native pine at Indian River appeared in the Cheboygan Daily Tribune on July 14. This also called attention to the town meeting which was called to consider means for combatting the disease. A number of the most prominent and influential men visited the infected area at Constance Park.

Town Votes $500.00

As a result of a special Town Meeting July 18, called by officials of Tuscarora township, where Mr. Mandenberg told of the blister rust and its control and which was attended by 150 people, the sum of $500. was voted for Ribes eradication. This work was to start not later than August 1, 1928. This is the first community in the State to vote funds for protection against the blister rust.

Private Cooperation

Four landowners controlling some 1120 acres of land, the Alogonquin Boys Club-320 acres, and the Michigan State Park under the Conservation Commission with 300 acres, have all agreed to eradicate the currants and gooseberries on their holdings.

J. M. Corliss

BLISTER RUST ON COOK FOREST IN PENNSYLVANIA

In August, 1927 Dr. L. O. Overholt of Pennsylvania State College found blister rust on wild gooseberries in the Cook Forest area and sent me notice of the same. On September 18 and 19 I visited that area and had no difficulty in locating the Ribes rust and also pine infections. The Ribes rust was apparently confined to a limited locality almost all within the Cook Forest Area and on this date pine infections were found only in one spot at the village of Cooksburg near the Clarion River. Examination of the pine infections indicated that they largely originated about 1925 or 1924 and that there were a very few dating back to about 1920. No later cases than this were located. The territory in the neighborhood has wild Ribes in great abundance, especially along the streams and hillsides where some of the original forest has been removed, and the chances for extensive infection in this area are very great if these are not promptly taken out. It is worthy of note that although this infection in Clarion County is a center for that part of the State the school children's survey did not bring in any report of the disease from that county in 1927.

July 20, 1928. W. A. McCubbin - Pa.

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THE IDAHO SCHOOL OF FORESTRY ERADICATES CURRANTS AND GOOSEBERRIES FROM ITS WHITE PINE

Under the direction of Dr. E. E. Hubert, those students who have had practical work in blister rust control have eradicated all the Ribes from the forest nursery and arboretum.

The Forest School nursery and arboretum, consisting of about twenty-five acres, together with an isolation strip of over nine hundred feet, were gone over from two to three times and so should be practically Ribes-free.

The areas were first reconnaissanced, and then three crews of five men each were organized. These crews ran strips back and forth, pulling all Ribes as they were found. A total of 480 Ribes bushes were eradicated. The species found were, for the most part, Ribes lacustre and various cultivated species.

Western Blister Rust News Letter. Vol. 3, No. 7.

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Returning to the field one morning recently, we decided to check over the work of the previous day, for the reason that Ribes had been found in great abundance. It is well that we did, for we found about 50 of the wild bushes we had uprooted the previous day nicely heeled in the ground. Inquiry led to the identity of the enterprising individual. Such thrift led us to believe that he must be Scotch, but on visiting the gentleman's home, we found him to be of Swedish origin. He promised to forsake his erring ways, and return to the path of the righteous.

E. J. McNerney - Mass.

PROGRESS OF BLISTER RUST CONTROL WORK IN NEW YORK STATE

The continuous rainy weather that we have had in New York this eradication season has put a serious crimp in the progress of the work. It is the hope of the writer that somewhere in the blister rust control sections of the United States, that their lot has been more favorable for field work.

The eradication season got away to a feeble start one week later this year than in 1927. This was immediately followed by weather, that for comfort, compelled farmers or other outdoor workers, to wear fur coats or clothing of winter type. Eventually we got thawed out, only however, to find rain. This was followed each day by more rain, and the majority of the farmer co-operators are not enthusiastic enough about protecting their white pine from blister rust to do the work during rainy weather.

During the month of June, time was lost on account of rain during the day, or from wet bushes due to rain the previous night, on all but nine days. Not only has our program been handicapped, but the farmer co-operators dislike interruption with their farm work, and are provoked with suggestions that would further interfere with their plans.

Time rolls along regardless of weather conditions and we find ourselves with over half of the eradication season past and in the midst of the haying season. Should the latter prove as long drawn-out as was the planting season, we can not look with encouragement toward the future.

Fortunately a few white pine owners have been found in the various districts, who preferred to have the State foreman furnish the labor that was needed on their property, and again, a few have been found to whom farming is of second consideration. Through this means a few acres have been protected.

In spite of the handicaps that have been encountered, and the not too bright outlook for the future, we, all to the last man, have our courage left, and in addition, the foremen have considerable reserve energy that has been stored up during the time of hibernation, and with an even break, we hope to protect enough acres to make an annual report worth while.

July 1928. H. L. McIntyre - N.Y.

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FIRST REPORT OF TELIA IN MASSACHUSETTS

The first record for the telial stage on Ribes in Massachusetts, was sent in by Agent McNerney. He reported telial columns on escaped red currants in the town of Sutton on July 11. On the following day, Agent McNerney also found the same condition on Ribes nigrum and on cultivated red currants and gooseberries. The reds in this instance were found to be more heavily infected than the blacks. On the same date, State Leader Perry and Agent Doore found telial columns on both wild red currants and on Ribes cynosbati, in the town of Conway.

BRINGING BLISTER RUST TO THE PUBLIC

It is possible that a type of blister rust demonstration somewhat different from any previously used or at least reported, may be of interest to readers of the News Letter.

The type of display, which is now in general use in western Massachusetts, originated in the mind of Agent G. S. Doore, and the first exhibit was placed at Conway, Mass., in June of last year (1927). This season, the idea has been developed by him and the writer, and has been modified somewhat by some of the other agents in the State, until there are several variations of the original. Nevertheless, the essential features have been retained in all cases. These features consist of a frame made out of two by threes into which are fitted four or more stem cankers. The specimens can be of any length up to five feet, and any diameter up to the limit that can be found in the locality, the frame being dimensioned to best accommodate the specimens available. For a medium-sized display 1" x 2" boards are heavy enough for the framework and for the very small size, even 1" x 1" material is sufficient. The uprights of the frame may be set into the ground or they may be given "feet" so that the display will stand upright on the ground or floor. Most of our larger displays have been set in the ground, because there has been no other way to support them properly.

We started out by calling them roadside displays with the intention of erecting them along roadsides, but primarily only at places where people congregate. We soon found out that the display is adaptable to any circumstance and we have since been turning it to numerous duties. The first roadside demonstration of this type was put up at the State Forest camp on the Mohawk Trail by Agent Doore and the writer. This is undoubtedly the exhibit referred to by Miss Sargent in the July News Letter. There are now similar large displays at the Hairpin Turn on the Mohawk Trail, at the Summit on Jacob's Ladder, at Squaw Peak on the Monument Mountain highway in Great Barrington, at the foot of Mt. Tekoa in the town of Russell, in the village of Southampton, at Lake Wyola in the town of Shutesbury, and in Forest Park in the city of Springfield. There are numerous medium-sized displays at picnic groves and bathing beaches and smaller ones in libraries and offices of the Extension Service. State Leader Perry requested a small edition for use in his office in the State House in Boston.

The variations in this display have had to do with materials used, methods of construction and types of signs used. Everyone who has used it has worked his own individuality into the make-up. For instance, Agent Wheeler abandoned dimension material and used gray birch for one frame, and oak sapling for another. The birch proved to be very effective, but the oak is not desirable, because it is too much like the pine specimens and does not give the necessary contrast. The accompanying photos give an idea of the different variations in construction and show the types of signs used. It is my observation that each individual likes to select his own signs and I am, therefore, refraining from describing signs. The photos show what we use. All of our frames including those around signs have been painted or lacquered green. The gray birch and oak saplings, of course, are exceptions. Messrs. Woolworth or Kresge will furnish you paint or lacquer at ten cents a can which is sufficient for

one medium-sized display. We coat our paper signs with clear lacquer and it is very satisfactory. We also use this on the red and yellow tags.

We Massachusetts agents feel that this display is an excellent way to bring the disease to the attention of the public. Its effectiveness lies in its simplicity. We know that large numbers of people are seeing them every day, and we hear many favorable comments. Further than that we have no direct evidence of their worth. When you can not readily take the public to blister rust, then bring blister rust to points where the public can make their own observations for "seeing is believing".

August 9, 1928. W. J. Endersbee - Mass.

Since receiving the above item from the Associate Editor of Massachusetts, we have received the following item from Agent Doore in regard to certain concrete results from the new type of roadside demonstration as described above. (Edit.)

"Recently two large motor coaches filled with tourists stopped one pleasant Sunday afternoon near one of the new type of roadside displays in Franklin County. The guide with the party was requested to secure blister rust bulletins for each member of the tour. This was easily accomplished for there is always a generous supply of such material near the display".

"Mr. George E. Morton of Worcester, Massachusetts viewed the same exhibit, asked a few questions, received a bulletin, and then remarked "I have twelve cultivated black currants in my garden at home and I shall take them up at once".

"Commissioner of Conservation, Mr. Bazeley, has seen and approved this display. The same day he accompanied the Agent from the district to the Rowe infection area, where 54% of the pines are infected with the rust."

Locations of Roadside Demonstrations Shown on Opposite Page.

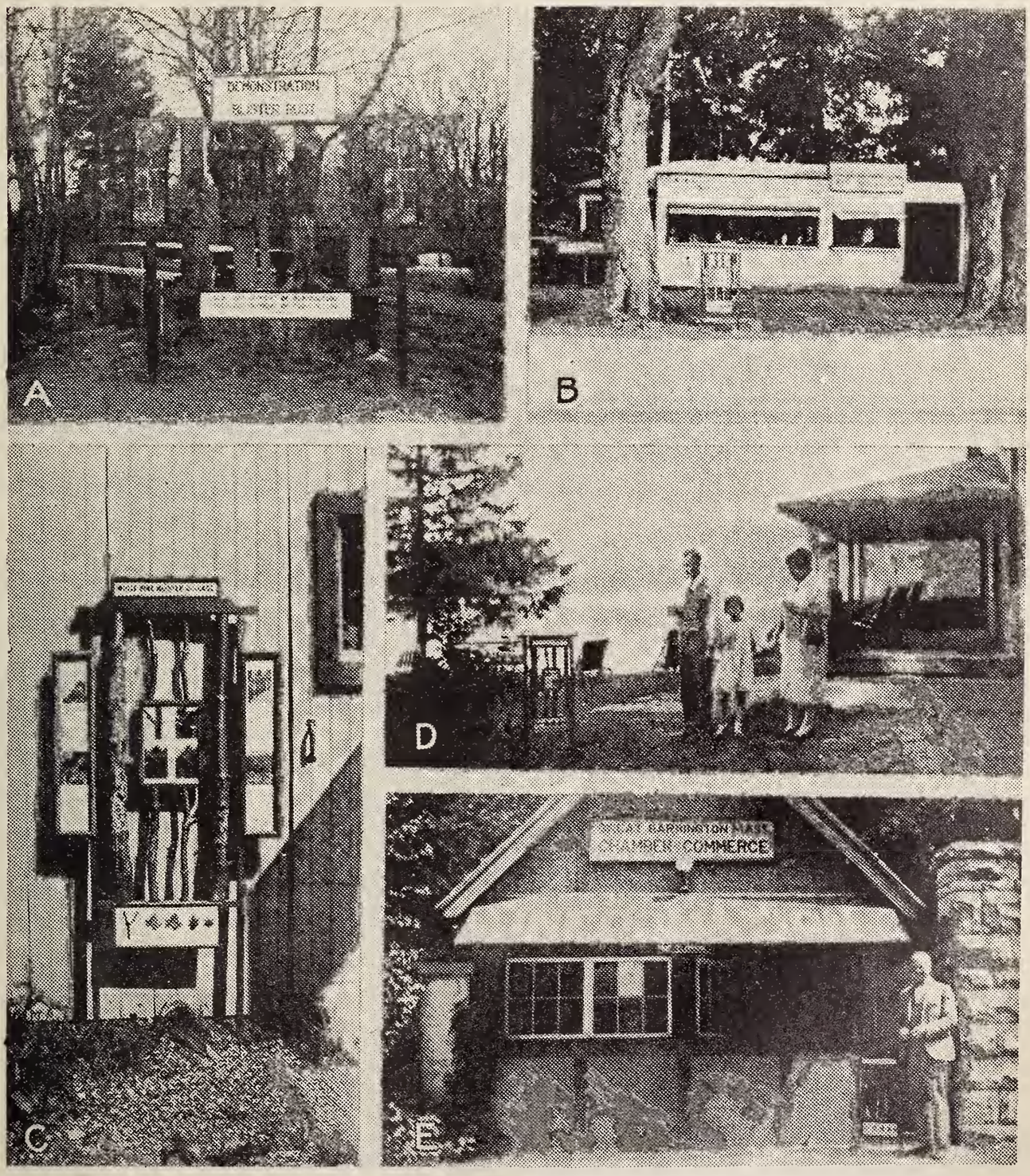
A. At the Summit on Jacobs Ladder, Mass.

B. Roadside stand, Sheffield, Mass.

C. Northern Worcester County, Mass.

D. Gibson's Grove, Lake Buel, Mass.

E. Information booth Chamber of Commerce. Great Barrington, Mass.


A
B
C
D
E
CHAMBER COMMERCE

AN INTERVIEW WITH A PINE OWNER

As part of foremen training, Agent Endersbee of Berkshire County has his men send in written reports of interviews which they have with pine owners. These may be actual interviews or what the men may consider an ideal interview. They are submitted at infrequent intervals but the men are instructed to be prepared to submit them at any time they may be called for. This is having the effect of making the men think more about their job and they are learning more rapidly to express themselves intelligently. The following is one of the first received from a man who had been ten days on the work:

About a mile and a half from the Jacob's Ladder highway, an old house stands in the hills of Becket. I stopped there one day and as I approached the house I met an old lady who had been picking dandelions. She seemed very old, yet very active for her years and was apparently not a bit overdone from the experience of bending to pick the dandelions.

When I asked her about the pine grove around her house she became greatly interested because she thought I had come to buy it. I told her, however, that I was there to help her save it so that when the time came to sell, it would be worth buying. I explained how currant and gooseberry bushes spread blister rust to the white pines and showed her the specimen I had in the car. This convinced her that something serious might happen to her pines even though she may not have fully understood my words.

About this time her husband drove up in a wagon and one could see at a glance that he was an "old timer" by his walk and manner of expression. I explained blister rust to him and showed him the specimen and finally he said, "Wal I don't know how much good it will do but we'll take a walk out in the morning and look it over. Course I ain't saying I haven't any bushes on the place but they hain't touched the pine yet." The next morning our "walk" was soon interrupted when we found gooseberries which we pulled. Nearby we found three infected pines. Then more gooseberries and red currants. Before noon we ran onto 11 more infected pines.

Needless to say, this man was terribly surprised but he was also interested and anxious to save those pines. And yet the day before he had said he had no rust and doubted the presence of Ribes.

Tom Nugent
Foreman, Berkshire County, Mass.

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A blister rust clause in a deed conveying property is something new to most of us. John R. Townsend, a Metropolitan lawyer who owns a nice planting of white pine in Dutchess County, recently sold a tenant house from his farm and in the deed he stipulated that no currants or gooseberries of any kind should be grown or cultivated by the new occupant. Mr. Townsend had uprooted his own Ribes and he made up his mind that he was not going to have any trouble with his new neighbor over the question of removing currants to protect another man's pine.

H. G. Strait - New York

MAINE TOWN FOREMAN PLANTS WHITE PINE

Another "Ribes Hound" has joined the ranks with Endersbee, Swain and others who believe "PINES PAY". B. H. Edwards, blister rust town foreman in Casco, Me., is the guilty party. He owns about a hundred acres on the south shore of beautiful Dumplin Pond which is located in the Crescent Lake district of the town of Casco. Much of this land is already timbered and for the past two years Mr. Edwards has been making thinnings, weedings and improvement cuttings with one idea in mind-to get a good white pine stand. Incidently I might mention that he has swamped out a trail along the shore of the pond and this has become very popular with the younger set; so popular in fact that it has been named "Lover's Lane". Casco is located in the very heart of Maine's summer vacation area and in order to take full advantage of this, Edwards built an open air dance pavilion on a knoll overlooking the pond. Ample room for parking automobiles, one of the best dance floors in the State, a good orchestra, visions of gliding canoes along the pine-draped shores of the pond and the charming personality of the manager;-all these contribute to the success of the venture.

Last spring, as an experiment, Mr. Edwards dug up some natural pine seedlings and transplanted them along the border of the drive. Every tree lived and because of this success he plans to plant several thousand nursery raised white pine each spring for the next four or five years.

It might be interesting to note that the blister rust eradication on Mr. Edwards' property was completed on August 1, 1928. Extensive planting was delayed until all Ribes in the vicinity were destroyed.

Arthur Petersen - Maine

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RIBES ERADICATION AT ELK RAPIDS, MICH.

Because of the discovery of blister rust on mature white pine at Indian River in Cheboygan County, Mich., an awakened interest in the protection of native pine has spread to neighboring counties. Antrim County in which Elk Rapids is located, lies to the south and west of Cheboygan County, about 10 miles distant. The distance between Elk Rapids and Indian River is 52 miles, as the crow flies. No blister rust has yet been found in Antrim County on either pine or Ribes. The citizens of Elk Rapids, however, evidently believe in the old maxim, "An ounce of prevention is worth a pound of cure".

Mr. J. M. Corliss, on August 9, wired the Washington Office from Elk Rapids, as follows: "Town council meeting held last night. Council agreed to furnish crew laborers for uprooting Ribes in the town of Elk Rapids. Work to begin September 1. Stouffer will supervise crew."

WHITE PINE - RIBES - SHEEP.

Berkshire County, Massachusetts seems to be in a position to contribute something further to the discussion of sheep grazing on pine land and the effects of such grazing on pine and Ribes growth.

A summer resident of Sheffield, Mr. James E. Baker, was recently called upon by the writer and urged to examine his land for Ribes. He replied that he had none on his property because his sheep had eaten them. Further inquiry disclosed the information that he has pastured 60 sheep in this 50 acre lot for the past six years and that certain currant bushes which he definitely knew of are no longer living, having been killed out by the sheep. We made an examination of the lot and found a few very likely Ribes sites but no Ribes, several pines infected with blister rust (these were scattered in various sections of the stand) and lastly no evidence of sheep injury to the pines.

Following this brief search we examined certain phases more closely. We checked the age of cankers and found that the youngest ones were on 1922 wood which was the year the sheep were first introduced to the pasture. Most of the cankers are older. We found three of the smaller trees dead from the effects of the disease and all the others we located will die. The pines range in size from two feet to twenty five feet in height and up to eight inches in diameter, breast high. The smaller pines have grown up in the presence of sheep but whether these animals have kept down the younger reproduction is not evident or at any rate has not been determined. The pine is in groups for the greater part not fully stocked. Some 2000 of the older trees were planted, not in formal rows but staggered 8 or 10 feet apart. All the pine has grown tall and straight and is not limby and knotty as the writer thinks of the so-called pasture pine.

The presence of infection on pines would indicate the presence of Ribes on this lot at some prior date. This is particularly true in one spot along a roadside fence. Here there are five or six diseased pines, two of them dead. Within 30 feet are two large maples. The combination of roadside, fence and old maples would presuppose the former presence of Ribes very close to these infected pines and in the lot. So far none have been found nor have any traces such as dead stubs been located. Farther along this roadside and along adjoining property gooseberry bushes appear very frequently near the fence. Ribes growth is, or has been until recently, general and in places abundant thruout the surrounding region. On the property directly across the road wild gooseberries and red and black currants are abundant. It seems unlikely that this property was entirely free from these bushes especially where similar site conditions prevail.

As previously stated there is no evidence of sheep injury to white pines or to any other trees. On the authority of Mr. Baker, sheep like to rub against a hard, smooth surface and this is provided by the posts which support a shelter for them. In addition there are two or three old apple trees which they use for this purpose. It is Mr. Baker's opinion that rubbing posts could be provided and that the sheep would use them in preference to trees.

While no exhaustive study of this lot has been made or even attempted, the conditions so far observed point favorably to sheep as friends and benefactors of white pine. At any rate these animals have cost us a cooperator.

W. J. Endersbee - Mass.

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BLISTER RUST CONTROL IN LEWIS COUNTY, NEW YORK

The white pine in Lewis county is all to be found east of the Black River in six towns. West of the river the elevation reaches 2,000 feet and runs to hardwood and spruce.

The Ribes population in Lewis county seems to be centered mostly in the town of Diana, the most northeastern township in the county. Here the topography is cut up by ridges and ledges, and more Ribes are found per acre than in any other town. In the five towns south of Diana, the topography is more rolling and sandy soil with occasional swamps. Goosberries are found here along wet runs and fence rows and not very often within a pine stand. In the swampy areas, skunk currants are quite prevalent, but not as heavy as would be expected.

In the town of Diana a full crew removed over 5,300 Ribes in one day from a State lot of natural pine. Sixty-five per cent of these bushes were skunk currants from an adjoining swamp. This is a heavier population of skunk currants than we have foun. in swamp areas in other towns in Lewis county.

Up until the end of June, our average eradication cost per acre has been about 50 cents, but with continued work in the town of Diana and the large number of Ribes on these areas, this moderate cost of 50 cents will no doubt be increased.

Blister rust was found in the town of Diana for the first time this year on a natural stand of white pine. To date, we have worked in four towns east of the Black River and have found blister rust in each town. We expect to find it in the pine in the other two towns before the season is over.

July 25, 1928. I. S. Bowlby - New York

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Infection is very heavy on Ribes this year due to continued rainy weather. It looks like another 1919.

E. C. Filler - Mass.

MEN OF NEW BOSTON(N.H.) STUDY BLISTER RUST PROGRAM ON SUNDAY

So interested are New Boston farmers in knowing more about white pine blister rust and its eradication, that 20 of them agreed to give Sunday afternoon to a study of it, when they decided that good hay weather would prevent them from visiting the nearby forests during the week.

Although tired from a week's task in the hot sun and hay fields, 20 of the leading farmers in New Boston gave up their day of rest and spent the afternoon tramping through the woods, studying methods of eradication and discussing forestry problems in general.

Their trip was arranged and conducted by C. S. Herr, blister rust agent. He took them to two badly infected areas, and to other areas where the crew had pulled thousands of wild currant and gooseberry bushes and hung them in trees to die.

The local men each tried their hand at locating and yanking the bushes, and decided they would stick to their haying and let blister rust crews, specially trained, handle the job.

More than two hours were used for the program. The informal discussion covered blister rust, its identification, eradication and prevention, pruning pine for clear logs and general management of the woodlot as a worthwhile cash crop.

Agent Herr now has several crews at work in this and other Hillsborough county towns and much is being accomplished in spite of the late start due to unfavorable weather conditions.

Manchester (N.H.) Union. 7/19/28.

NOTE:-The above clipping is interesting inasmuch as it is one of the few instances that we have been successful in getting local people to come out during the period when a crew is in town.

In talking with Herr this morning I understand that the re-action to this meeting was excellent, and that many persons heretofore opposed to control measures are now in favor.

July 20, 1928. L. E. Newman - N.H.

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A copy of the new blister rust circular, Miscellaneous Publication 22 was obtained by a cooperator in Skowhegan, Me., to send to England.

BOY SCOUTS OF GREATER NEW YORK PROTECT WHITE PINE

Along the Delaware River in Sullivan county is located a tract of 12 to 14 thousand acres of wooded, hilly land which is owned by the Boy Scout Foundation of Greater New York. This area with its lakes, brooks, hills, and woods makes an ideal vacation ground for the Boy Scouts of the congested borough of Greater New York.

The development of the site is well underway and already 900 boys are being accommodated at the camps of the Brooklyn Scouts. Ultimately, it is expected that 3,000 boys can be provided for at one time. This will include delegations from Manhattan, Queens, Brooklyn and the Bronx.

W. S. Codman, who is in charge of blister rust work in Sullivan county, has secured the co-operation of the organization in the control of the rust on the white pine areas of the property. There are two to three thousand acres of white pine and two crews of scouts are pulling Ribes. These crews are supervised by blister rust foremen William Masterson and H. E. Blanchard.

To prevent loss of time in travel, and to otherwise facilitate the work, the scouts camp out in the woods with the foremen. The foremen board in camp with the boys, and are in charge at all times. The scouts received no pay for their work since the whole thing is considered as of an educational nature. The foremen instruct them concerning the life history of the blister rust and also touch on other phases of forestry and woodcraft.

As an incentive to the scouts, each one who satisfactorily completes a certain period in the blister rust crew is awarded the "White Bar Trail" emblem. This emblem was previously awarded for satisfactorily completing a five day camping and hiking trip of 60 miles. This award adds zest and enthusiasm to the work which was lacking at first.

Since it is impossible to give all of the 900 boys an opportunity to work in the crew, a blister rust exhibit is maintained at camp headquarters where all have the privilege of learning from specimens and literature.

Although the scouts may not work with the same speed and efficiency as an experienced crew, it is felt that a considerable area of white pine can be protected and at the same time much good educational work performed.

J. D. Kennedy - N.Y.

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That the diagrammatic illustrations in Miscellaneous Publication 27, "Black Currant Spreads White-Pine Blister Rust", by S. B. Detwiler are of unusual value in showing the spread of the disease is shown by the following excerpt from Mr. E. C. Fillers's letter of August 7. He writes: "I have just received a supply of your Misc. Pub. No. 27. The illustrations are particularly effective. I showed them to a man this morning and he said that for the first time he was able to clearly visualize the spread of the disease."

THE GROWING OF WHITE PINE UNDER AN OVERSTORY

In the past few months I have been questioned several times as to the ability of white pine to grow under an overstory of hardwood where it was not too thick. I have never advised reforesting very strongly under a hardwood stand, but have recently heard it discussed that white pine would and would not make any noticeable growth under a stand of poplar. I had to disagree with those who said it would not because I know of a plantation (about eight years old) in the town of Plattsburg where the trees are putting on large growths each year under a stand of Trembling Aspen (Populus tremuloides). The overstory is not over 18 feet high on the average, with comparatively heavy foliage, but I feel that the pine will soon overtop the overstory.

It is my belief that white pine can be grown under an overstory of poplar very successfully, if it is not too dense. A plantation or natural stand of white pine would receive more natural protection than one in the open; it would be protected from cold winds, heavy snow falls, while young, a certain amount of protection from the spread of blister rust spores, and I am of the opinion that it would not be attacked by the white pine weevil as much as a stand more exposed.

I would like to hear some more discussions in regard to this subject which would give us a more definite basis to work on.

July 27, H. W. Holcomb - New York.

Edit.- One of the best bulletins on the above subject is that by A. C. Cline and C. R. Lockard, entitled "Mixed White Pine and Hardwoods," published by the Harvard Forest at Petersham, Mass., as Bulletin 8, in 1925.

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NOTE ON THE EZRA MEEKER HOMESTEAD

While eradicating the Ribes in a pine lot in the village of Meco, Fulton County, I learned a bit of history which might be of interest.

Originally, the old Indian Trail which led from the Mohawk Valley, near Fonda, north into Canada, passed through the village. This is one of the oldest Indian Trails, and later Nich Stoner is thought to have traveled over it. Not far distant are signs of an old wagon trail which probably marks the ammunition trail of Revolutionary times. The house on this property is the old Meeker homestead, where the ancestors of Ezra Meeker, of Oregon Trail fame, settled.

The pine of this lot is an almost pure stand, second growth, seeding in from a few old scrub trees, probably left by Ezra Meeker's father or grandfather as being too poor to cut.

Roy M. Hare - New York

RE-ERADICATION ON THE LOWVILLE(N.Y.) WATERSHED

I made a recent inspection of the Lowville watershed for re-eradication of Ribes for protection from the blister rust disease. Mr. Hewitt, Superintendent of the Lowville Waterworks accompanied me.

We found in several wet runs that skunk currants had come back in considerable quantities, and nearly every bush was quite heavily infected with the rust. Needless to say, we are going to furnish a foreman for this job.

The Lowville Water Company owns 900 acres of land. About 100 acres is wooded with hardwoods, the balance is mostly open land and has nearly all been reforested. White, red and Scotch pines, with a little spruce, are the species planted. The oldest plantings of Scotch and white pines were made in 1912; these have made very good growth.

Considerable pruning has been done in the older plantings. This work was done with a hand-saw and smooth, close cuts were made. The wounds are healing nicely and will make small knots in the lumber. The branches were taken off up as high as a man could comfortably reach. A little pruning work was completed by the axe method as the cuts were not close enough and in many cases the bark was stripped down below the branches.

Mr. Hewitt informed me that he had a considerable area of blow-sand where he had planted Scotch pine. The Scotch pine had lived, where they were not covered over with sand or the sand blown out from under the roots.

I noticed that where the pruning work had been done the branches were still on the ground. I suggested to Mr. Hewitt that these branches be loaded on a wagon or truck and taken to the blow sand area, then scattered over the area; replant the skips and try this method to hold the sand until the trees are large enough to protect themselves. This will be a local experiment worth trying and I expect to keep in touch with it to see the results.

I. S. Bowlby - New York

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What is Ribes eradication? We ordinarily think of eradication as the simple process of pulling a currant or gooseberry plant up by the roots and hanging it up in a nearby tree to wither and die, and on to the next one. But to pull ten or 15 husky black currants in a back yard in a large village or city is something different, even after the bargain is made, of course a one-sided bargain. The owner demands that the bushes be summarily ejected from the premises. The foreman immediately makes haste to find the public dumping grounds. We had had an instance where it meant nearly a day's work to get these bushes on the dump in one place.

H. G. Strait - New York

THERE'S NO SUCH THING

I had heard about Blisters and Rust on the pine,
But never once thought it would get onto mine.
'Twas said that the currant harbored this Rust,
But I knew well enough that I had none of such.
I had searched my pastures for every stray cow,
But never saw gooseberries I was willing to vow.
If any old duffer was ever cocksure,
I was that one and bound to endure.

Then one summer day a state foreman drove in
And told me the story again and again.
He claimed that gooseberries harbored the rust
Which spread to White Pines like ordinary dust.
I argued against it and told him quite plain,
That none of these bushes grew in my lane.
Still the fellow insisted that we ought to look,
And so to convince him we went down by the brook.

Now that chap was sharp and trained to his task,
And before we had started a currant he'd grasped.
Out of the ground it came, roots and all,
And he carefully placed it on the stone wall.

There was no doubt about it, that chap had an eye
That was trained like an eagle's, ever ready to spy.
For down thru the pasture, where-ever we went,
He pointed out bushes, as tho directed by scent.
But down by the brook where 'twas cool and damp,
I could see them myself without any lamp.
There were currants and gooseberries and skunk currants too
And the number I tell you was far from few.

And there close-by the trees came down,
Was disease on a pine which the fellow had found.
A six inch pine in the prime of life
Was girdled by rust as keen as a knife.

I could see for myself that the pine looked sick,
And I began to suspect that this was no trick.
We examined more pines standing near by,
And many we found were soon going to die.

There was no longer doubt in my set mind,
That Pine Blister existed and wasn't on mine.
And before that chap left, I had made a date,
To destroy those bushes before 'twas too late.

W. J. Endersbee -
Berkshire (Mass.) Farmers' Bulletin, July, 1928.

WHITE PINE BLISTER RUST QUARANTINE REGULATIONS REVISED

INTRODUCTORY NOTE

This revision of the rules and regulations supplemental to the white-pine blister rust quarantine includes substantially the following changes of interest to shippers: Provision is made for the interstate movement, under permit, of five-leafed pines from the generally infected areas consisting of the New England States, New York, and Washington, into the more lightly infected States east of the Mississippi Valley quarantine line, and also from Washington into Oregon and Idaho, when they have been raised from seed in a nursery free from currant and gooseberry plants and with a Ribes-free zone around the premises; the prohibition of movement from Wisconsin and Minnesota to Michigan, Pennsylvania, and New Jersey, is removed; and the interstate shipment of cultivated red and white and mountain currant and cultivated gooseberry plants from infected States without a Federal permit and without environs inspection, is authorized, provided they have been dipped in lime sulphur solution of specified strength, maintain the required conditions as to dormancy and defoliation, and are shipped within the prescribed period. No change is made in the quarantine order itself.

These modifications are based on the results of investigations carried on by the Bureau of Plant Industry, and on changes in the blister rust situation during the past two years. Such studies have confirmed the effectiveness of the Ribes-free zone as a permanent protection to five-leafed pine stands, and have proven the value of the lime-sulphur dip as a measure for the disinfection of currant and gooseberry plants. In the meantime, surveys have indicated that the distribution of the blister rust in Michigan, Pennsylvania, and New Jersey, is now comparable to its prevalence in Wisconsin and Minnesota, and a continuance of the special restrictions on movement between these two groups of States is, therefore, no longer of value as a means of preventing the spread of infection.

Slight modifications are made in the shipping dates for currant and gooseberry plants as related to dormancy and defoliation and these will, it is believed, correlate more closely with commercial nursery needs as related to climatic conditions, without any increase in the danger of dissemination of the rust to new localities.

July 31, 1928.

C. L. Marlatt
Chief, Plant Quarantine and Control Administration.

EDIT.- As yet the blister rust Quarantine 63, as revised, is only in mimeographed form. As soon as this has been printed, copies will be sent to blister rust employees. Others may secure the revised quarantine by writing direct to the Plant Quarantine and Control Administration at Washington.

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Telia was found on the wild gooseberry in Skowhegan, Somerset county, Me., July 6, 1928.

NURSERY SANITATION BEING CONSIDERED BY RHODE ISLAND

Nurseries in Rhode Island desiring to grow five-leafed pine from seed in an area protected from blister rust, to comply with the revised federal quarantine and state regulations, have the opportunity of taking advantage of a recent state decision. Nurseries growing five-leafed pine as nursery stock may safe-guard this stock to allow such pine to be shipped out of New England into other infected States and into the State pine districts by applying to the State Department of Agriculture to have the nursery set aside as a white pine blister rust control area.

Each application will be considered on its own merits but wherever in the discretion of the State Commissioner of Agriculture the safe-guarding of the white pine is more important than continued permission to grow Ribes in the area, and wherever the cost of eradicating all Ribes is not prohibitive, the State will grant the nursery the right to be considered a control area and will furnish the labor for eradicating all Ribes within 1500 feet and all cultivated black currants within one mile. However, any compensation demanded for Ribes eradicated within 1500 feet of the nursery must be paid by the nursery and if agreeable to both parties may probably best be done by replacement with some other plant or shrub.

The State does not expect many nurseries to take advantage of this offer at present. It is chiefly a provision for the future, since the use of white pine as an ornamental tree is increasing, and as the local nurserymen gradually realize this, white pine will be more important here as nursery stock.

A. W. Hurford - Rhode Island.

NOTE FROM ROCKINGHAM COUNTY, NEW HAMPSHIRE

Five crews have been at work during June. Several men have been obliged to leave the work, due to ivy poisoning. In spite of the inefficiency due to local help, the character of the work performed has been exceptionally good. This is due largely to the foremen and scouts who are men of three or more years experience. Nine out of the ten foremen and scouts are residents of Rockingham County, and the tenth man has seen four years of service as foreman in the county. Approximate area covered by Ribes eradication in June:

Brentwood	1000	Acres
Danville	1000	"
Exeter	500	"
Hampton	1000	"
Kingston	1200	"
Newton	900	"
Total	5600	"

L. C. Swain - N. H.

AMONG OURSELVES

Mr. H. P. Avery of the Washington Office returned August 13 from a two week's motor trip through Pennsylvania, New York, and Vermont. While on the trip he called on Mr. E. T. Holland at the sanitarium at Cassadaga, N. Y. He reports that "Eddie" is much improved, and is feeling more like himself. A stop was also made at Warrensburg, where he met Al Fivaz and his crew of investigators, including Chas. Geiser, T. L. Corbett, G. U. Wolcott, and J. D. Griffiths. From New York, Mr. Avery motored over into Vermont where he called on Mr. Bradder at Rutland and Mr. Rose at White River Junction.

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Others in the Washinton Office, including Mrs. M. L. Reiff and Mr. J. M. Palmer, will take their vacations during the latter part of August. Mrs. Reiff will motor to New York and Massachusetts. Mr. Palmer will visit his home in Rhode Island.

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Mr. R. G. Pierce left Washington August 20 for a six weeks' trip into Virginia and West Virginia. He plans to make a study of the Ribes conditions around the Forest Service nursery at Parsons, West Va., and on the Shenandoah National Forest in Virginia.

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The engagement has been announced of Miss Dorothea Waltz of Marblehead, Massachusetts to Mr. G. Stanley Doore of Boston, Massachusetts. Mr. Doore is in charge of Blister Rust Control activities in the Franklin - Hampshire (North) section of Massachusetts with temporary headquarters in Conway.

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Scout Whalen reports that in Vassalboro he was informed that woodchucks are the rodents that gnaw blister rust cankers in the winter time. From this, then, it seems the woodchuck has given up his regular routine of being a seven sleeper.

J. Mac White - Maine

PUBLICATIONS

Blister Rust

Detwiler, S. B. Developments in white pine blister rust control in the United States. Jour. Econ. Entom. 21: 476-481. June, 1928. No. 3.

Hurst, R. R. Rept. Dominion Botanist for the year 1926, Division of Botany, Canada Dept. of Agri. 1927.
"On 14th June, 1926 heavy infection of blister rust (Cronartium ribicola) was found in a clump of Pinus strobus at Charlottetown. As the abundance of wild Ribes makes eradication impossible, the excellent plantations of five-needle pines in the island are believed to be doomed."

Martin, J. F. Blister Rust Spread by Wild Gooseberry and Currant Bushes. U. S. Dept. Agr. Yearbook. 1927. pp. 419, 420. 1928.

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McCubbin, W. A. White pines and the blister rust. Bull. Pennsylvania Dept. Agr. v.11, no.3. 10 p. Mr.1928.

Posey, G. B. Blister Rust of White Pine Invades the Pacific Northwest. U. S. Dept. Agr. Yearbook. 1927. pp.138-139. 1928.

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HOW TO MAKE A TALK

A mimeographed article on the subject of "How to Make a Talk" by Mr. C. M. Newman was recently sent to each of the field employees, through the courtesy of the Extension Service. If additional copies of this talk are desired, I would suggest writing direct to the Extension Service at Washington for them.

One of our Maine agents writes concerning this paper: "I recently received from your office a mimeographed article by C. M. Newman on How to Make a Talk. I call it a mighty helpful article and wish we could receive more of a similar nature."

R. G. Pierce

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BLISTER RUST NEWS

September 1928.

Volume XII Number 9

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12, No. 9.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 12, No. 9. September 1928.

PINES

Pine trees grow so upright on a rugged
hill,
Stand so tall and straight,
You'd think they had a mission to fulfill
Somewhere between the clouds and where
the white stars wait.

Pine trees rage so wildly with the wrest-
ling gale
Fall with such a crash,
They seem to fight a battle with the hail
To keep a tryst with thunder and with
flash!

Pine trees speak so softly on a summer's
day,
Whisper low and sweet,
As if they've learned the world's old
heedless way
And still find something kindly to repeat.

Pine boughs, burning, flame with such a
sudden light,
Flare to vivid life again,
Surely they go with passion, joy and
pain,
Pine boughs burn so brightly on a win-
ter's night.

Margery Swett in The Epworth Herald.

RIBES "COMEBACK" AFTER CLEAR-CUTTING

In 1925 blister rust control work was conducted in the town of Hanson, Mass., and all Ribes removed from locations in the white pine areas in that town. In one instance, however, some very large, as well as a few small gooseberry bushes, were left in a swampy area in the southern part of the town. The reason for this was that the pine lot was to be cut off the next winter and the expense of removing the plants did not seem to be justified. One day recently, the Agent had occasion to be in the vicinity of this area and made an examination to determine conditions. The area had been completely clean cut, pine as well as hardwoods, and in the logging operation it was evident that the soil had been much disturbed. Not a single Ribes bush could be found in the entire area. It would be interesting to learn of the observations of other agents along this line.

E. M. Brockway - Mass.

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MAINE MAN REMOVES CULTIVATED CURRANTS WITH TACKLE

There were 44 husky cultivated red currant bushes about 30 years old to be uprooted in the town of Bridgeton, Me. When George Burns, town foreman arrived, he found 80-year old Leander White, owner of the bushes, and his faithful horse, Major, ready to cooperate. Major made a brave start, but with all his strength could not budge one of the giant bushes, until Mr. White brought out a four pulley tackle. With the tackle made fast to a sturdy apple tree, foreman Burns attaches one end of the rope to a bush, Major starts off once again and out comes the big Ribes. This process is repeated 44 times and Mr. White has completed his eradication.

CHARLES M. HALEY - ME.

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ANOTHER RIBES MIXTURE

Mr. Stouffer's note in the July Blister Rust News recalls a Ribes situation which I came across a few years ago (June, 1926), in the Chapel Pond section of Essex County, N.Y. Here, in a rocky gully at 1900 feet elevation, were *Ribes glandulosum*, *R. lacustre*, and *R. cynosbati* growing together in a dense mass. This is the only place in the State where I have observed these three species occurring together. *Ribes glandulosum* may be found associated with either one of the others, but the *lacustre* commonly restricts itself to high swamps and rock outcrops, above the general distribution of the *cynosbati*.

E. W. LITTLEFIELD - N.Y.

NOTES FROM MAINE

In one town in Somerset County, we have an excellent example of cooperation. An owner, after completing his blister rust eradication at a cost to himself of $18.50, voluntarily gave a talk on blister rust before the local Grange. Individual cooperation of this sort is a big factor in getting town cooperation.

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Perhaps it would be of interest to the other Maine County agents to know that in two towns in Somerset County, Ribes lacustre has been found. It is not a very pleasant currant to pull, as it is well named prickly currant.

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In Madison, Somerset County a patch of 150 Ribes nigrum growing within 900 feet of a 35 acre plantation of pine, were removed. I am sorry to say that they were removed without my knowing about it, as I missed getting a real picture for the news.

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Very little work has been done in the town of Canaan because of wet weather and haying. One owner who had about one half day's work for a foreman, unhitched his horses from the hayrack one noon and removed all his cultivated bushes, thereby depriving the foreman of his half day's pay.

JOHN MacG. WHITE - MAINE

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WHITE PINE PLANTATION VERSUS THE CULTIVATED BLACK CURRANT

During the spring of 1928, one-half million trees were planted by private owners in Franklin County. Of this total number three-fifths were white pine, and 200,000 of these were planted outside of the Adirondack Park Line. This, of course is as it should be, for blister rust control work in the northern part of the county is less expensive (averaging 18 cents per acre for the combined State and private cost in 1927), the soil is better adapted to white pine growth, and the centers of infection from which blister rust might spread and do the greatest damage are in the southern portion of Franklin county.

However, to maintain this comparatively free of blister rust condition in the northern part of the county, a thorough check-up and uprootal of all cultivated black and flowering currants must be made. Wherever blister rust has been found in this part of the county, it can usually be traced either directly or indirectly to one or the other of these species of currants. Although the rust is not bad at present, the open and plateau-like character of the country, exposed as it is to the full sweep of the prevailing westerly wind, will afford excellent opportunity for the spread of blister rust in the future unless this survey is made. This problem is one which must be solved and worked out in 1928.

W. F. PRATT - N.Y.

SCOUTING THE SARATOGA COUNTY, N.Y. SAND FLATS

Ribes hounding on the Ballston flats is a problem a little different from the ordinary. The land is quite level with small creeks at intervals, making ravines. Farm woodlots, which are numerous, are fast growing up to pitch pine and white birch. These farms were once devoted to raising rye straw for making paper at the mills on Kadeross Creek. Ribes are very scarce in these parts because of the very dry character of the soil. However, the little creek banks are natural habitats for the swamp gooseberry and escaped red currants. Inevitably one finds cultivated currants around every cellar of some forsaken farmhouse. Around one cellar I found about 200 flowering currants (Ribes odoratum), some of which were as large as ten year old pine trees.

White pine blister rust is lacking or very scarce here, and owing to the thorough work done, I believe that it will never be serious in this locality. However, the Scotch pine blister rust is very common on the pitch pines.

HORACE HARRIS - N. Y.

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PAGE THAT "HARD-BOILED" FELLOW

Page that "Hard-boiled" fellow! I mean the chap who says this is all nonsense about destroying currant and gooseberry bushes to stop the white pine blister rust. To him or them I would tell the following tale of real faith in what the members of the blister rust organization are endeavoring to do:

Mr. Albert Whitney of 161 Pine Street, Stoughton, Mass., was interviewed on July 13, 1928. He had a patch of 50 cultivated currants. Mr. Whitney was informed of the campaign to prevent the further spread of the blister rust and was told that it would be necessary for him to get rid of the cultivated Ribes. The usual literature was also left for his further information. On August 29, a follow-up call was made on Mr. Whitney. It was then found that he had removed about one-half of the patch and he requested that the bushes be left so that he could finish the job himself and thus do his bit toward the cause of controlling the disease in his neighborhood.

And now comes the climax in the tale. This man is stone-blind! He has to be led to the garden and then he does his work by his sense of touch. He wished to remove his Ribes to make his community a better place in which to live by insuring the white pines against the blister rust. Would that he might see those trees which make his town more attractive.

E. M. BROCKWAY - MASS.

BLISTER RUST NEWS ITEMS FROM LOWER HUDSON VALLEY

Request from Mr. McIntyre for news items for next issue. Couldn't think of anything unusual, so will give you the routine. Here is what arrived in this morning's mail:

Letter from County Agent Buchholz of Columbia county, asking for help. He writes: "I certainly hope you can see your way clear to come up and give us a hand, especially on Sunday. It will be a unique experience for several years at least, if we try to put up an exhibit at Chatham fair without the help of the blister rust Agent." Agent Harpp please read. We can expect co-operation in this county from the Farm Bureau.

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Letter from foreman Ben Muzzy, enclosing BR1's. His reports show:

Aug. 20 - 87 black currants pulled (Ribes nigrum)
" 21 - 67 " " " " "
" 22 - Rain

A rainy day has helped to pull the kinks out of Muzzy's back more than once this season. This is in Westchester county.

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Letter from foreman Earl Vosburg in which he states that he has found some escaped European black currants.* He is saving them for me to see. Vosburg has been pulling R. nigrum all the season so he ought to know what he is talking about. Al Fivaz please read.

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A letter from the Boston Office with two question marks in red pencil, asking for a reasonable explanation.

A letter from New York City, asking for an inspection of a white pine plantation in Putnam county.

A letter sent by airmail from Lansing, Mich., asking that I investigate the unusual qualities of a certain automobile.

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We have the authoritative statement of one who has lived on the ancestral home grounds all her life that a European black currant, or its progeny, has thrived there since 1834. To swish such an historic shrub out of existence without creating more than a mild flurry requires tact to say the least. Credit to foreman Muzzy.

H. G. STRAIT - N. Y.

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*An escaped Ribes nigrum was found near Fairville in Wayne county, when the Ribes nigrum were removed everywhere in the town of Arcadia. This was the only case found this season in any of the counties where I have worked.

SCOUTING FOR RIBES ON SHENANDOAH NATIONAL FOREST IN VIRGINIA

The Office of Blister Rust Control has begun a preliminary survey of blister rust conditions on the Shenandoah National Forest in Virginia. This survey was requested by the Forest Service and Mr. Pierce started the work on August 29. He writes:

"On this Forest, white pine is found largely in the bottoms along streams. Reproduction around seed trees is good. There are frequent openings in the forest formerly used as pastures which it is intended to plant, some of them to white pine. It is these open areas and areas of native white pine which it is planned to protect by Ribes eradication before the blister rust invades the Forest.

"The Ribes in the North River district so far have been scarce, probably averaging less than five per acre. The prickly-berried gooseberry, (R. cynosbati L.), is the only species run across so far. Many of the bushes show evidence of grazing, the live stem being but 6 to 10 inches long while the root is that of an old bush. A survey of the watershed of the Little River, a tributary of the North River, has just been completed."

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LANDED--AFTER CASTING FOR FIVE YEARS

Five years ago I set out to interest the owner of the largest estate in northern New Hampshire in having some blister rust control work done on his property. And every year after, I did likewise. He never objected strenuously to having the work done, always was courteous and kind, but put me off with the remark that "He'd think it over and let me know later what he intended to do." And that was the substance of his remarks every year following.

I never felt discouraged because of his attitude, but determined this year that I would try him again and use a different bait. It caught him. and now the crew is at work eradicating currant and gooseberry bushes on 1800 acres. The bait was a basket full of currants that I pulled up in his pine lot and carried along when I made my 1928 visit.

THOMAS L. KANE - N. H.

RIBES IN WESTERN NEW YORK RETAIN LEAVES

The leaves on Ribes are still on the bushes in good shape in western New York, and work will probably be continued until the last of September. A warm season without an excess of rainfall no doubt accounts for the leaves staying on better in western New York than in the Adirondacks, where rain and then more rain seems to have been the order of things.

C. E. BAKER - N. Y.

ALL BECAUSE OF A MOTHER-IN-LAW

In the course of scout work around some three hundred white pine plantations in Erie County, N. Y., no infections on either pine or Ribes had been found, and just when we were about to close out the County and report a clean slate, smack we ran into this situation:

Near East Aurora, a farmer had planted his white pines in transplant rows in his garden, intending to keep them there until such time as they were large enough to compete with the heavy grass growth on the plot where they were to be planted.

The mother-in-law, a lady of English birth, insisted on having black currants and the obedient son-in-law to keep peace in the family planted three bushes of *Ribes nigrum* within a hundred feet of the pine, knowing, according to his own story, that *Ribes nigrum* was outlawed in New York and would probably spread blister rust to the pines. He hoped, he told us after the bushes were found, that no one would ever come to his place checking up on the pine or the currants.

The son-in-law made every effort to conceal the bushes and tried to steer the scouts away from them, but the Ribes hound spotted the plants and found nearly every leaf on the bushes to be covered with rust, already in the telial stage.

Mother-in-law will not have her currants any more.

C. E. BAKER - N. Y.

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SOME BUSH

While visiting the blister rust crew of Stephen Dillion, on August 23, I found the largest gooseberry bush I have ever seen. This bush, a *Ribes rotundifolia* was taken from an area surrounding a plantation of white pine owned by H. Homgikouse near Salisbury, Herkimer County, N. Y. Twenty-eight main canes, each four feet plus in height, and plenty of side branches gave this bush a generous live stem. Each cane was thrifty and the bush was still in full leaf. The mass of roots attached to this bush measured about 12 by 18 inches. Of course the main roots were longer than 18 inches, but with the aid of two men and the foreman, this "baby" Ribes was removed.

I. S. BOWLBY - N. Y.

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BLISTER RUST WORKERS OF CUMBERLAND COUNTY, ME., HOLD OUTING

Cumberland County blister rust workers held their fourth annual field day on Sunday August 26 at Ingalls Pond in South Bridgton. The outstanding feature of the day was the exhibition of rifle markmanship by Scout Arthur Petersen. As in previous years, each family group brought their own lunch, and five gallons of bottled root beer in a tub of ice water furnished the liquid refreshments. It rained hard most all fay, but Scout Haley threw open his camp to the visitors and his cheery living room fireplace dispelled all gloom. In spite of the inclement weather, everyone had a good time.

S. D. CONNER - Me.

LARGE RUMBER COMPANIES COOPERATE IN BLISTER PUST CONTROL WORK IN NORTHERN NEW HAMPSHIRE

At the present time, (September 15) a blister rust crew is at work on 2,000 acres, mostly white pine, owned by the Brown Company of Berlin, N. H. Work will start soon on the pine lands of the Blanchard Lumber Company, Success, N.H., and the Pike Manufacturing Company, Pike, N.H. A few years ago the lumber companies of this section did not pay much attention to blister rust control, but lately they are changing their views and I have succeeded in lining up about $2500 worth of private work with the several cooperators mentioned above.

T. L. KANE - N.H.

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BLISTER RUST FOUND ON RIBES IN THE INLAND EMPIRE

Blister rust was found on Ribes at two locations in the Inland Empire during the second week in August, one on the Kaniksu National Forest near Gleason Ranger Station, Sec. 6, - .58 N. R. 4 W., the other on the Pend Oreille National Forest on Rattle Creek, Sec. 5,-T 57 N., R. 3 E.

The infection near Gleason Ranger Station was located on two bushes of G. inermis one hundred yards apart, ten leaves were infected on one bush and one leaf on the other. On Rattle Creek, infection was discovered on only a few leaves of R. laxiflorum.

Putnam and Joy spent the latter half of July on the Chelan, Colville and Wenatchee National Forests, locating suitable areas for a study of the infecting power of R. lacustre and R. viscosissimum. and scouting for the disease.

Infection was found on R. petiolare on the summit of the Kettle Range on the Colville National Forest. Pinus albicaulis 1¼ miles away was inspected but no infection was found.

On the Wenatchee National Forest light infection was found on G. watsoniana on two bushes of 400 examined. Associated pines were not infected.

Infection was also located on R. bracteosum at Scenic, 10 miles west of Stevens Pass, on the Snoqualmie National Forest. Here several bushes were infected. Ninety-five per cent of the leaves were infected on some. A careful inspection was made of pines nearby, but no blister rust is showing up, as yet.

Western Blister Rust News Letter. August, 1928.

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OWNERS REMOVE CULTIVATED RIBES

During the month of August 1928, in District III-IV Massachusetts, 156 property owners removed 1,229 cultivated Ribes at the request of the District Agent and did the work themselves. This is encouraging.

E. M. BOCKWAY - MASS.

RHODE ISLAND ISSUES FOLLOWING BLACK CURRANT POSTER

W A R N I N G

POSSESSION OF BLACK CURRANTS ILLEGAL

Black Currants Spread White Pine Blister Rust, A Fungus Disease, Destructive to White Pine, Rhode Island's Most Valuable Timber Tree.

Blister rust is a destructive fungus disease that lives on both white pine and currants or gooseberries, its alternate host plants. The rust cannot spread from pine to pine. It must spend part of its life on currants and gooseberries before going to healthy pine. Because of this fact, it is easy to control the rust by eradicating all currants and gooseberries in pine areas.

The cultivated black currant is the most susceptible host plant of the rust and is generally found diseased during the late summer season. This plant is therefore a dangerous nuisance wherever growing since it establishes local centers of infection and allows the rust to continue its spread in the state.

Since white pine in Rhode Island is much more important to the welfare of the people than cultivated black currants, the Commissioner of Agriculture in the revised regulations for the control of the white pine blister rust by virtue of authority given in Chapter 286 of the General Laws, Revision of 1923 has declared

THE CULTIVATED BLACK CURRANT A PUBLIC NUISANCE AND PROHIBITS THE POSSESSION, TRANSPORTATION, PLANTING, PROPAGATING, SELLING OR OFFERING FOR SALE, PLANTS, ROOTS, SCIONS, SEEDS OR CUTTINGS OF THESE PLANTS WITHIN THE STATE.

Such plants may be destroyed by the State Commissioner of Agriculture or his agents without compensation.

Copies of these regulations may be obtained upon request from the State Department of Agriculture.

CO-OPERATE IN THIS WORK. UPROOT BLACK CURRANTS.

HELP SAVE THE WHITE PINE

STATE DEPARTMENT OF AGRICULTURE, STATE HOUSE, PROVIDENCE , RHODE ISLAND

STATUS OF LOCAL BLISTER RUST CONTROL WORK

Continued from last Issue

Local control of the blister rust is being successfully accomplished under an eight year cooperative program in New England and New York, and under a 10 year cooperative program in the Inland Empire and Pacific Coast states. In the northeastern states, since 1922, about 5,000,000 acres have been cleared of wild and cultivated Ribes, at a cost averaging 18 cents per acre. Including the experimental control work done prior to 1922, about 6,000,000 acres, or two-thirds of the estimated acreage of the northeastern pine area, have been brought under control. The land owners pay the cost of Ribes eradication, but receive supervisory aid from the State. The United States Department of Agriculture leads the service and educational work required to get pine owners interested and proficient in control. The land must be re-examined for Ribes on an average of once in seven years. However, the cost of re-eradication work is less than the initial cost because Ribes are fewer and smaller. After the initial work is done, well-stocked pine stands over 25 years of age commonly remain practically free from Ribes until maturity. The average annual cost of Ribes eradication for blister rust protection in the northeastern states is less than five cents per acre per year, and this is no serious handicap to the profitable growing of white pine under forest management.

The control program in the West is divided into a five year experimental phase, ending in 1930 followed by a five year period of large scale application of control. Progress in development of feasible methods of local control has been more rapid than was anticipated in the schedule of accomplishment outlined in the control program.

Pole stands and mature timber constitute about two-thirds of the acreage cleared of Ribes and the costs of Ribes eradication in such stands have averaged 85 cents per acre. Young timber growth covers about one-fourth of the area and costs of control in this type have averaged $3.17 per acre. The open, brushy, stream type comprises one-twelfth of the total acreage and the average cost of freeing it from Ribes has been $11.46 per acre. Cost of control will vary according to the proportion of these types in the control area. Present results indicate that large tracts can be protected at costs averaging from 10 cents to 25 cents per acre per year.

Control reconnaissance on more than 600,000 acres in the western white pine region shows that 60% of the white pine land is free from Ribes, while 40% bears Ribes and requires systematic crew work to remove them. The more open stands will have to be re-examined at five year intervals. Well-stocked stands apparently remain free from Ribes after the initial eradication work is done until the stand is opened up by logging or fire. It has been found that Ribes seeds remain in the soil for long periods, in viable condition, and there is often a heavy regrowth of Ribes after the ground is exposed by light burning or disturbed by logging.

Data on Ribes ecology indicate clearly that permanent and effective suppression of Ribes can be secured to a very large degree through practicable methods of forest management. Another highly important development in the

western control experiments is that Ribes petiolare Dougl., a susceptible species growing abundantly in the stream type, is readily and completely killed by spraying the foliage with a solution of sodium chlorate. A light weight forest-fire pump has been modified to give spray pressures of 250 to 300 lbs., and by this means a chemical crew can eradicate Ribes in the stream type at about one-third the cost of pulling the bushes by hand. Further research is being done to make the spray solution fully effective against other species of Ribes, to decrease the cost of spray application and to improve the efficiency of the spraying machinery. These and many other developments give a sound basis for believing that blister rust control in the West will prove to be as practicable and as readily accomplished as it has been found to be in the East.

S. B. Detwiler in
Extract from the Journal of Economic Entomology
Vol. 21, No. 3, June 1928

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HUDSON BAY CURRANT (RIBES HUDSONIANUM) DISCOVERED IN MICHIGAN

Mr. D. J. Stouffer recently collected specimens of a black currant in a swamp at Indian River, Cheboygan County, Michigan, which have been identified by the writer as the Hudson Bay Currant, (Ribes hudsonianum) Richards).

At first these bushes, of which there were about 100 in a swamp, were thought to be escaped Ribes nigrum, the European black currant. However, the specimens differ in several points from those of R. nigrum and are similar in practically all respects to specimens of R. hudsonianum collected at various places in northern Minnesota which are within the known range of the species; (now on file in the Washington office).

The discovery of this black currant in Michigan is noteworthy, since it was not listed by the eminent Michigan botanist, W. T. Beal, in 1903 in Michigan Flora, and by Coville and Britton in their monograph on the Grossulariaceae.

The known range of Ribes hudsonianum according to Coville and Britton is as follows:

> Hudson Bay to Central Alaska, and southward in the interior of British America, to eastern British Columbia and Ontario, entering the United States in northeastern Minnesota.

Mr. H. J. Ninman reported finding this species several years ago in northern Wisconsin.

ROY G. PIERCE.

PLANTING TREES BY MACHINE

The idea of planting trees by machine is by no means new, various devices and ideas having been tried out with more or less success.

This spring, a Mr. Baker of Rensselaer county, having several thousand three year old transplants of Norway spruce to set out decided to use a transplanting machine which he owned and had often used in setting out berry plants. The machine, which is operated by one man and which uses a light tractor to furnish motive power, cuts, with a V-shaped plow, a furrow about six inches deep, but the plow can be adjusted to any depth. Into the furrow thus formed the trees are set and are tamped tightly in the ground by two heavy wide-rimmed wheels which closely follow the plow and are set at an angle so that while the part of the wheel on the ground is only about one inch from the rim of the other wheel, yet the tops of the wheels are five or six inches apart. Setting the wheels at this angle assists in packing the earth tightly around the roots.

This machine surely did a good job for Mr. Baker; not only were the roots set straight down in the ground but the dirt was also well packed around them. The number of trees which can be set by the machine depends a great deal on conditions, such as length of rows, soil and topography. However, from what I have seen would say that two men, one to drive the tractor and the other to operate the machine, should be able to set from 1500 to 3000 trees per hour. Of course there are limitations to work this machine will do. It can not be used on very steep side hills, nor is it a time saver when used in very rocky or rooty soil.

There are thousands of acres of deserted farm land in this State which, not so many years ago, were under cultivation, and it is upon these fields that a machine such as Mr. Baker has could be used to advantage. Of course, they are too expensive for one individual to buy, yet for a County or Community the cost would not be excessive.

PAUL B. RICHMOND - N. Y.

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A NOTE ON RIBES AND SHEEP

I have noticed articles in the Blister Rust News of late telling how sheep will eat Ribes. In making a tour of the New England States, with a committee on grazing, I noticed that sheep would eat deciduous vegetation in preference to evergreens. However, I did not observe that they selected Ribes from other leafy plants. Sheep will browse on white pine. The damage depends entirely on the amount of feed present and the number of sheep in the pasture.

K. E. BARRACLOUGH - Extension Forester
New Hampshire.

WOODLOT IMPROVEMENT

Mr. F. M. Callward, former blister rust agent and now Extension Forester for Vermont, gives the following suggestions for improving woodlots in a circular letter prepared for forest owners:

TO IMPROVE YOUR WOODLOT

Remove:

1 Trees of little value such as hardhack or ironwood, black birch, grey birch and soft maple.

2 Crooked or forked trees.

3 Short boled, large crowned trees which can never make good lumber.

4 Over topped trees which have had their growth stunted.

5 Diseased trees or trees seriously injured by insect attacks.

6 All dead trees. These serves as breeding places for insects and diseases.

Encourage:

1 Valuable species such as sugar maple, white and yellow birch, white ash, red and white pine, spruce and hemlock,

2 Young growth of the species named above by thinning, pruning and other cultural measures.

Protect:

1 Your wood lot by keeping cattle out. This applies especially to the sugar orchard.

2 Your white pine by removing currant and gooseberry bushes.

Weed Your Woodlot As You Would Your Corn Field

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QUARANTINES

INFESTED JAPANESE BEETLE AREA INCREASES

Surveys during the present summer have resulted in finding considerable numbers of Japanese beetles at two points in Springfield, Mass., and at several rather widely scattered locations in the city of Alexandria, Va., and its suburbs. It appears necessary, therefore, to extend the quarantine to include these points and such adjoining territory as may be necessary in the States concerned. At the same time consideration will be given to the extension of the regulated area in Connecticut, where specimens of the insect have been found at New Haven, Hartford and New London; in Delaware, where Sussex and Kent Counties are now involved in infestations; and in Pennsylvania, where similar finds have been made at Lewistown, Marysville and Sayre.

September 10, 1928.

SOIL CHARGES AND SILVICULTURE ON THE HARVARD FOREST

SUMMARY

On comparatively heavy soils in central New England, forests of pure white pine (Pinus strobus) develop on abandoned fields as an intermediate stage in succession. These forests, covering a large aggregate area, have been the chief objective in the regional forestry. They show, however, strong tendencies to revert to hardwood, rendering reproduction of pine difficult. They produce only low grade lumber and decline rapidly in growth and vigor after 50 to 60 years of age.

The conversion of these forests to stands of the more valuable hardwoods, or mixtures of hardwoods and pine, can be accomplished by removing the pine in one or several cuttings, followed about four years later by cleanings or weedings to favor individuals of the desirable species.

The soil profile under a certain 80-year-old white pine stand with almost no ground cover shows a thin layer of dry needle litter, a thick layer of raw humus, and a strongly podsolized horizon, below which is a thin typical burnt sienna or enriched stratum. These conditions are unfavorable.

Under an adjacent 18-year-old hardwood forest, where the soil profile at the time the pine was removed resembled the present profile under the white pine, there is now a true mull profile. The rate of decomposition has become so rapid that not only has the accumulated raw humus merged with the mineral soil, but less than a single year's leaf fall now remains on the surface of the ground. The humus-enriched earth closely resembles the best garden loam in porosity, color, uniformity of texture, and moisture, and contains many earthworms.

The bird population has changed from the black-throated green warbler, hermit thrush and oven bird of the pine wood to other species among which the Maryland yellow throat and woodcock are noticeable.

The hardwood stand is dense, thrifty and growing rapidly.

On lands showing tendencies to hardwoods, mixed stands can be secured more cheaply than stnads of pure pine, and, since they greatly improve soil conditions and show thrifty growth, they represent good silviculture and sound economics.

Extract from "Soil Changes and Silvilculture on the Harvard Forest," by R. T. Fisher.
Ecology, January, 1928.

OFFICE COMMENT

CONCERNING LETTERS OF AUTHORIZATION

It appears desirable and necessary to again call the attention of heads of offices to the necessity of securing approval in advance of letters of authorization covering contemplated travel. Not only should the letter of authorization be secured in advance of a contemplated trip, but the individual concerned should have the letter in his possession and thoroughly familiarize himself alike with the amount of money covered by the letter and the terms of the letter. Much difficulty with accounts would be avoided if this practice were carefully followed. In the case of an emergency, an explanation will be necessary, with a clear justification of the necessity of antedating a letter of authorization. In the absence of adequate explanation, the letter will become effective on the date of approval.

Wm. A. Taylor,
Chief of Bureau.

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COMPTROLLER'S DECISIONS

Where an employee on a per diem basis returns to headquarters at such time during the day as to entitle him to at least a fractional part of the per diem allowance for that day in accordance with paragraph 66 of the Standardized Government Travel Regulations and on the same day begins a new trip from which he returns to headquarters in less than 24 hours, his allowance for the actual expenses for that portion of the first calendar day consumed by the second trip may not exceed that portion of the maximum daily expense allowance as it is represented by the fractional part of the day not covered by the per diem allowance for said day under the preceding trip.

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When issuing transportation requests for accomodations on coast-wise steamers upon which all accomodations are designated as first class, the requests should call for the lowest first-class accomodations and if the traveler considers that accomodations available under that description are not in fact first class he may secure accomodations first class in fact and pay the excess cost, claiming reimbursement in his expense account with a full explanation of the circumstances.

The furnishing of superior railway or steamship accomodations under paragraph 13 (c) of the Standardized Government Travel Regulations is not authorized solely on account of the personal preference or official rank of the individual, but must rest upon some necessity from the standpoint of the Government e. g., such as the necessity for transaction of official business enroute.

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Traveling Expenses - Meals - Standard or Daylight-Saving Time

In claims for reimbursement of expenses for meals at the beginning and ending of a travel status it is generally immaterial whether standard time or daylight-saving time is to be followed. One or the other standards of time must be selected in each locality, and in an area where daylight-saving time is in effect reimbursement should be determined with reference to that time.

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MARK PLANT SHIPMENTS PROPERLY

Attention is called to the following letter of August 3, from the Post Office Department to Dr. C. L. Marlatt, Chief of the Plant Quarantine and Control Administration, concerning the shipment of plants and plant products by Federal Nurseries:

My dear Dr. Marlatt:

It appears from a report of the postmaster of San Gabriel, Calif., that parcels of plants and plant products shipped by mail under penalty labels of the United States Department of Agriculture by Federal nurseries in that section of the country, are not properly marked to show that they contain plants, and the fact that they do contain such matter can not easily be detected. Consequently, such parcels are likely to be delivered to the addressees without being submitted for terminal inspection.

It also appears from the postmaster's statement that parcels of this kind do not show any marking as to the contents except the notice of nursery inspection and that this notice sometimes is pasted on the side or back of the parcels. He also states that within a month he intercepted a parcel of this kind with the notice of inspection covered by the shipping tag which had been stuck under the binding twine.

It is kindly requested that you take such steps as will result in proper tags or labels being placed on the address side of parcels of the kind in question in such manner as to bring out prominently the nature of the contents in order to facilitate the handling of the matter in the mails and avoid the danger of the parcels being delivered to the addressees without being inspected and passed.

Sincerely yours,

(s) Wm. C. Wood, Superintendent.
Division of Classification.

THE GHOST OF A FORD
or
DID THE FORD STILL KNOCK

On a recent trip in the Allegheny Mountains in the vicinity of Ole Bull Castle, Kettle Creek country, I had an exciting experience.

It was a rather warm afternoon and I had negotiated about thirty five miles of mountain roads and a stretch of what was once a logging road, to a point on Joreg Run, known as Impson Hollow. Here it was necessary to leave the automobile, a Ford furnished by the State, as further progress by it was out of the question. I found a convenient parking place that evidently had served the purpose many times before.

At one time or another an old Ford touring car had made its last trip, and refusing to go further had been abandoned to the cruel elements. It had been stripped of all the removable parts, such as tires, rims, head-lights, windshield, etc., and was a most helpless derelict. I gave it a passing look and went on my way, searching for blister rust cankers on pines in the various plantations in that vicinity.

After several hours of tramping over conditions such as exist after logging operations and a burn, and winding in and out among planted trees, I returned to the car. It was now late afternoon, and the sun had dropped behind the mountains and the shadows had begun to deepen. I was jotting down some notes about conditions I had observed during the afternoon, when I became aware that there were noises other than those of the wind rustling the leaves on the trees, or those made by the water in the brook on its way down the mountain. At first I thought it was someone coming up the trail, and the knocking was that of the approaching car. Now the noise seemed quite near and I looked up but saw nothing or no one, and the strange knocking seemed to be coming from the derelict Ford. At first I thought it might be the wind blowing some loosened part, but soon gave up this idea as the knocking seemed still louder when the wind stopped blowing.

By this time my curiosity had gotten the best of me, and finishing my notes and putting my note-book in my pocket, I started to investigate. I had heard ghost stories and read ghost stories, but here was a chance to investigate one first hand. As I walked toward the old Ford the knocking ceased. I walked around the old car, but saw nothing other than a rusty hulk of iron and steel, and all was as quiet as the vastness of the mountains and forest. Had I been tricked? My eyes still resting on the old car, it's cushions misplaced, the front ones having disappeared, and the rear one tipped forward into the tonneau, one edge resting against the back of the front seat. Everything was quiet and I began to wonder if the "Ghost of the Ford" has vanished.

Not caring to be cheated in this way, I started to make a more thorough search. I was sure I had heard a noise, and surely determined to find the cause. Raising the rear cushion from its resting place, and as my eyes penetrated the darkness beneath, I saw a dark object move quickly, and I guess I moved just as quick, for my first thought was of rattlers, as I had met with and dispatched a 51 inch specimen just a few days before, and I did not care to close in on one

bare handed. I dropped the old seat more quickly than I had raised it, and it went back to its resting place with a thud, and all was quiet again. I was now thoroughly aroused, and being sure I was on the right track, I quickly raised the old cushion, and there in the tonneau was a large sized woodchuck instead of a rattler.

Satisfied that I had found the source of the uncanny noise, I went about to find out how it all happened. The animal had gotten to the front seat through the door which was open, then climbed over into the back of the car and under the turned-over cushion, and for the time being had become entrapped and was trying to get out of this predicament. Not being able to climb up on the hard smooth surface of the front seat, and the old seat being at such an angle that he was unable to climb out, he was trying to push the cushion to one side, and in so doing lifted one corner of the cushion up, letting it drop back into place. The metal edge coming in contact with that of the front seat made the rapping noise that I had heard. Thus the mystery of the "haunted Ford" was out.

L. W. Hodgkins, - Mass

Aug. 7, 1928

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FIELD EMPLOYEES' UNCLAIMED MAIL

The Office of Information directs attention to the fact that much work now has to be done unnecessarily in connection with the maintenance of mailing lists, on account of the apparent failure of field employees to request the postmaster at their official headquarters to hold all but first-class mail matter while they are temporarily absent on trips. The same is true as regards experiment station and agricultural college people, especially in vacation periods.

The Office of Information receives daily, through the Government Printing Office, many pieces of mail which have been forwarded from the official headquarters of the addressee to a place where he may be located for only a short period of time and from his temporary location returned to Washington by the Post Office Department as "unclaimed," "unknown," "moved left no address," etc. The Government Printing Office, upon the receipt of such mail, immediately destroys the stencil bearing the addressee's name. When these matters are referred to the Department of Agriculture for the clearing of its records it is frequently found that the employee is still in the service and his name must be restored to the list. All of this causes unnecessary work, expense, and delay, and often failure to receive publications of interest and value. For the sake of better service and economy, the cooperation of all field personnel in this matter is solicited.

THE OFFICIAL RECORD. 9/5/28

AMONG OURSELVES

Mr. S. B. Detwiler left Washington the sixth of September on an extended trip through the midwest and western States, for the purpose of inspecting field work and investigating blister rust control conditions.

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Mrs. Coral J. Photis, Washington Office, will be on a vacation from September 17 to 30. While on leave she will spend several days in Wilmington, Del. and Philadelphia.

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Mr. Chas. Geiser who has been assisting Mr. A. E. Fivaz at Warrensburg, N. Y., returned to Washington September 4. He left Washington September 11 for several weeks' scouting work in northern Maryland.

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Dr. J. F. Martin left Washington September 12, for a conference with E. C. Filler in Boston.

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Miss Oma V. Watters returned to Washington Office September 12, after a week's stay at Eagle's Mere, Pa., and a motor trip to Binghamton, N. Y.

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The Interbureau Bowling Association of the Department inaugurated the season on September 13, and Blister Rust got away to a fine start by winning two of its three games.

PUBLICATIONS

<u>White Pine</u> Fisher, R. T. Soil Changes and Silviculture on the Harvard Forest. Ecology, Jan. 1928. pp.6-11. See page 225 of this News Letter.

BLISTER RUST NEWS

October 1928.

Volume XII Number 10

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12, No. 10

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

Vol. 12, No. 10. October 1928.

1928 A YEAR OF WIDESPREAD DISTRIBUTION OF BLISTER RUST IN THE NORTHEASTERN STATES

Dr. L. H. Pennington in a letter of Sept. 20, to Dr. J. F. Martin makes the following statements;

"Sometime ago you wrote me that blister rust infection upon Ribes appears to be equally as general and widespread this summer as it was last year. Insofar as New York and New England are concerned, I believe this is true. Practically everywhere in these states we have found Ribes to be infected. Ribes nigrum in the central and western part of New York is more generally and heavily infected this year than it was last year. Ribes vulgare and R. cynosbati in the same districts are also infected where they were not known to be have been infected last year. We have found that the usual resistant species, such as R. vulgare and R. lacustre are very frequently found infected in various places in New York and New England.

The general infection this year is probably due in part to long distance spread of aeciospores, and in part to local pine infections of 1925, which fruited this year for first time. 1925 seems to have been a very good year for pine infection in much of the Northeast.

"From the few reports I have received from the Lake States, and from the fact that there has been less rain and wet weather in those States than in the Northeast, I do not think there is to be found so much Ribes infection in Michigan, Wisconsin and Minnesota as there was last year."

BLISTER RUST A BAD ACTOR IN 1928

Scouting for blister rust was confined to the northern portion of the Idaho white pine belt on the Kaniksu and Pend Oreille National Forests until the discovery of the rust at Bovill on August 18. The crews were then transferred to Pierce and Elk River to scout in the southern portion of the Idaho white pine belt.

The following table gives the infection points located to date:

Region	County	No. of Infection points	Species Ribes	% Leaves infected
Ione, Wash. 6 miles east	Pend Oreille	1	R. viscosissimum	1
Gleason Ranger Station Kaniksu National Forest	Bonner	3	G.inermis	1
Rattle Creek, 24 miles North of Clarks Fork, Pend Oreille National Forest	Bonner	1	R.laxiflorum	3 leaves
Near Clarkia, Idaho	Shoshone	2	R.petiolare	1-25
Gold Center, Ida. for 7 mi. along upper St.Maries River	Shoshone	1	R.petiolare	25
East Fork Potlatch Creek at Chemical erad. camp	Clearwater	1	R.petiolare	3
Collins, Idaho, West Fork Potlatch Creek	Latah	1	G.inermis	1 leaf
Elk River, Idaho, Elk Creek and tributaries	Clearwater	6	R.petiolare	1-90
			R.lacustre (near infected R.petiolare)	2
Pierce, Idaho	Clearwater	5	R.petiolare	1-90
Near Oxford Ranger Station, Clearwater Nat.For.	Clearwater	2	R.petiolare	35-50
Headquarters, Clearwater Timber Company	Clearwater	4	R.petiolare	1-10
Headquarters, Clearwater Timber Protective Asso.	Clearwater	2	R.petiolare	4-90

Extract from Western Blister Rust News Letter for September 15, 1928.

Edit. In addition to the above, infections at Newman Lake in Spokane County, Washington, have already been reported in the July number of the Blister Rust News Letter on page 172. Eight pines were found infected on May 11th at Newman Lake about 20 miles northeast of Spokane. Pine infection was also found on May 30th 2 miles east of Palmer on the northern side of Larch Mountain, Multnomah County, Oregon. The 2 infected trees bore a total of 5 cankers, all apparently on 1923 wood. Additional infections on .G. watsoniana on the Wenatchee National Forest and on R. bracteosum on the Snoqualmie National Forest, and R. petiolare on the Colville National Forest in Washington were reported in the September Blister Rust News Letter on page 219.

Mr. Goodding also reports infection on western white pine and Ribes in Clackamas County, and infection on Ribes in Benton County in northwestern Oregon.

SCOUTING FOR BLISTER RUST IN WISCONSIN

In a letter of September 29, to Dr. Martin Mr. E. L. Chambers, State Entomologist of Wisconsin, writes: "I have just returned from a trip through Manitowoc and Kewaunee Counties where I checked up on several blister rust reports and found no sign of the disease in any woodlot that I examined. The currant and gooseberry leaves are still on the bushes and can be examined for blister rust very nicely, although the frosts are getting more severe each night and it will only be a matter of a few days until the leaves will begin to fall.

As a result of the scouting, a new pine infection was found in the vicinity of Barron and several woodlots were found in Shawano County with Ribes infections. These do not represent new isolated infections but only indicate that the disease has spread somewhat since the last scouting was done. We have put forth special effort this summer to inspect currant and gooseberry bushes all over the state whenever any of our men were out on other work and have yet to find any new infections reported outside those recorded and the ones mentioned in this letter."

On October 9 Mr. Chambers continues as follows: "In following up the suggestion contained in your recent telegram, we visited the counties adjoining Dickinson County, Michigan (where the blister rust had already been located) and found some white pine blister rust infection on Ribes in the vicinity of Commonwealth and Florence in Florence County (This county joins Dickinson County, Mich., on the west). Mr. Ninman expected to spend some additional time scouting around that vicinity to determine whether this rust was not blown in from some other locality since there is practically no white pine left in that portion of the state.

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MERRIMACK COUNTY (N. H.) WOODLOT OWNERS ASSOCIATION ACTIVE

During the recent summer months the Merrimack County Woodlot Owners Association have held two important meetings. The first happened to be the Annual Meeting of the organization. Mr. Milton J. Walker of Contoocook was re-elected President and Thos. J. King of Concord was re-named Secretary.

The Secretary's report showed that in spite of the youth of the organization, notable progress had been made. There are at present 123 members. Twenty-three members planted 76,000 white and red (Norway) pine, spruce and ash this last spring. In addition, many others have commenced operations calculated to improve their woodlands. Up to the year 1928, forty-two owners of woodlands in Merrimack County have taken advantage of the Walker Classification Law on 1,718 acres. Twenty-five per cent of all classified lots in New Hampshire are situated in this county.

The main speaker of the day was E. C. Hirst, formerly State Forester and now a member of the State Tax Commisssion. * * * In conclusion, Mr. Hirst advocated that the members of this association stand behind the State in its efforts to control the white pine blister rust. "Blister rust control is a necessary work if we are to raise pine, and I believe it can be controlled" added Mr. Hirst.

T. J. King - N. H.

NEW BLISTER RUST INFECTIONS IN MICHIGAN

As a result of the white pine blister rust survey through the schools which was begun early in September 1928, nine new counties have been added to those in which infections were found last year.

To date (October 16) we have had just slightly over 400 returns out of a little over 7,000. Of these 400, 17 teachers have sent in infected leaves. The range of infection is quite great, extending through almost the entire length of the State and including 13 counties in all. Nine of the counties have not been known to have been infected previously. A list of the counties follows:

Keweenaw, Gogebic, Baraga, Marquette and Dickinson in the Upper Peninsula, and Missaukee, Roscommon, Iosco and Gladwin in the Lower Peninsula are newly infected counties. Osceola, Isabella, Sanilac and St. Clair are counties which have been reported through the survey but were found to be infected for the first time last year. This makes a grand total of 28 infected counties in the State of Michigan at the present time.

The Roscommon County infection is at St. Helens, only about twenty-five miles from the State Forest Nursery at Higgins Lake, and the Iosco infection is only two or three miles from the Federal Forest Nursery at East Tawas.

Host plants found infected through the survey are black currants mainly, with one infection on cultivated gooseberries and cultivated red currants.

David Stouffer, Michigan.

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MICHIGAN CARRYING ON BLISTER RUST EDUCATIONAL WORK AT THE FAIRS

Mr. David J. Stouffer under date of October 4th reports that he

> "Had a nice exhibit at the five State fairs where the Department of Agriculture placed exhibits this year. Mr. E. C. Mandenburg was in charge of the exhibit at these fairs and reports that many citizens were eager to secure information about the (blister rust) disease".

Concerning the enlargements of the drawings in Mr. Detwiler's Miscellaneous Publication No. 27 entitled "Black Currants Spread White Pine Blister Rust", these will be very helpful for window displays and educational work which we are planning to carry on throughout Michigan.

BOY SCOUTS FIGHT PINE BLISTER ON TRAIL IN DELAWARE COUNTY, N. Y.

In cooperation with the State of New York, the Scouts from the new camp on the Delaware are working on the prevention of the white pine tree blister. As the White Bar Relay Trail is not yet completed the candidates for the emblem given at Kanohwahke for proficiency in trail camping have been assigned to the work of trail making. One of the important features of the new trail is that the land on each side of the trail for a considerable distance back from the trail will be free from the gooseberry and currant bushes. The removal of these bushes is the most effective way of preventing the spread of the white pine tree blister rust, as the blister lives on these bushes before it attacks the pines, and if there are none of these bushes it cannot develop to the stage where it can harm the pines.

The first group of candidates started out from the Brooklyn Camps on the 12th of July. They selected a site on the Delaware River and set up camp. Pup tents were erected, two stone fire places were made, and other sanitary details provided for. After a hard day's work on the bushes they were busy preparing supper when they received a visitor in the form of a rattlesnake which they killed. It measured 45 inches in length. That night the foresters held a huge council fire and dedicated their camp, calling it Camp Halwill, from the names of the leaders - Harold Blanchard and William Masterson.

This was the first of a large number of groups which are expected to work on the trail, and the experts from the State are rejoicing in the prospect of a very valuable bit of work in the interest of saving the white pine of the Delaware Valley.

THE COUNCIL RING - Brooklyn Council,
Boy Scouts of America - July 28, 1928.

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GRAPHIC CHARTS SHOW SPREAD OF BLISTER RUST AND ITS CONTROL

Mr. Detwiler, in his revised article on black currants, which was reprinted as Miscellaneous Publication No. 27 entitled "Black Currants Spread Blister Rust", used with a telling effect four graphic charts. These charts show:-

(a) How blister rust spreads into uninfected regions.
(b) How blister rust attacks white pine forests.
(c) How cultivated black currants destroy the effectiveness of blister rust control.
(d) White pine wood lot fully protected from blister rust damage.

A set of enlargements of these charts, each about 16" by 24" in size, has recently been sent to each of the state leaders for use in educational work. These enlargements have met with the approval of field men, and additional sets can be procured from the Washington office. Word has come from Mr. Stouffer that he is using these charts in window displays in Michigan, while Mr. Frost writes that he used one of the enlargements at the Farmington Fair about the middle of September where Agent Curtis was having a small blister rust demonstration.

R. G. Pierce.

ESCAPED RIBES NIGRUM

Mr. E. J. McNerney sent in about 60 seedlings of Ribes nigrum Linn., escapes from cultivation, on September 15. His letter to Mr. Detwiler regarding these, states:-

> "The original bush was brought from Canada about 20 years ago. This bush was growing in the open and attained great size. We found no seedlings around this bush. Nearby, in a tangled growth of briars, wild cucumbers and grapes, I found eight nigrum bushes, about 10 years of age. These bushes had apparently come from seed, as they were very shallow rooted and were removed without the aid of a pick.
>
> "Large numbers of seedlings were found near these bushes. This led to a search for others at greater distances. These I am sending were found 200 yards from the parent bush and 150 yards from the 8 offspring.
>
> "This occurred in the town of Upton (Worcester Co. Mass.)"

There is no doubt that R. nigrum does occasionally escape from cultivation, but it is probable that few if any escapes occur very far from the parent bushes. In making observations on the occurrence of escapes, it would be well to determine the distance from the parent plant, the nature of the site where the escape is found, and the possibility of origin from a cutting, intentional or accidental, of the parent plant. The specimen or a substantial part of same should be sent in to the Washington office, so that the identification as nigrum may be verified.

To date in the East, to the best of my knowledge, these are the only instances of escaped nigrum that have been reported.

INSTANCES OF ESCAPED R. NIGRUM

Place	Site	Dist. from parent plants	No. of escaped plants found	Found by	Identification checked
Warrensburg, N.Y.	Fork of maple tree	300 ft.	1	A.E. Fivaz	Yes
Wevertown, N. Y.	Cellarhole	100 "	abt. 12	A.E. Fivaz	Yes
Upton, Mass.	?	600 "	over 60	E.J. McNerney	Yes
Fairville, N.Y.	?	1?	1	C.E. Baker	?
——————N.Y.	?	?	Several	Earl Vosburg	?

A. E. FIVAZ

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An employee of the United States Government is not qualified to serve as a member of a Federal grand jury. United States v. Griffith et al., 2 Fed. Rep. (2d), 925,

Civilian employees of the United States Government who are summoned to serve on a Federal grand jury are not entitled to compensation for the time so absent from duty, except so far as they may be entitled to leave of absence with pay and their absence from duty is charged to such leave.

NURSERY SANITATION IN CONNECTICUT

A start has been made this season on our nursery sanitation program. One hundred and fifty four nurserymen were interviewed with a view to securing data on -

Number of nurseries growing white pine for interstate shipment.
Number of nurseries growing Ribes, especially R. nigrum.
Attitude of nurserymen on nursery sanitation.

Eighteen nurseries agreed to cooperate in establishing official control areas; two at first favored the plan but later refused cooperation on the grounds that it would antagonize their neighbors to cause the removal of cultivated Ribes (these nurseries agreed to discontinue growing white pines); five will not cooperate because they wish to grow and sell Ribes; fifty-six will not cooperate because they grow only a few white pines which they sell locally and because they do not wish to stand the expense of establishing sanitary zones and do not wish to antagonize their neighbors; sixty-six do not grow white pines; seven are undecided and will decide later; and four nurseries could not be located; while the remainder have gone out of business.

The following proposition was put to the nurserymen.

> The proposed control area to consist of a zone extending 1500 ft. from the bounds of the nursery within which all Ribes are to be removed, and an additional zone of one mile from the nursery bounds within which Ribes nigrum are to be removed. Thereafter it will be declared illegal to grow said bushes within said zones. The State agrees to bear all cost of the preliminary survey to locate cultivated Ribes and to ascertain their owner's attitude toward removal. The nursery agrees to furnish or pay for labor necessary to the eradication of wild and cultivated Ribes.

Within the contemplated control areas surrounding the cooperating nurseries 70 Ribes owners possessing 1,014 cultivated bushes were favorable toward removal, and 27 Ribes owners possessing 567 bushes were unfavorable. The attitude of 28 owners possessing 342 bushes could not be determined at the time.

On the strength of the survey, the results of which have been only partially recorded, here, it was decided to establish official control areas at ten nurseries. Before this could be legally done, a public hearing was held, of which five days previous notice was given. Since no one appeared to contest the action, the Director of the Experiment Station issued the quarantine order establishing the control areas and it was approved by the Governor. The work of eradicating the Ribes has been underway for some time and will be completed in the spring of 1929.

The only nursery in Connecticut where such an official sanitation zone has been maintained for two years was inspected this year. All hopes

of qualifying for interstate shipment of five needle pines under provisions of the revised Federal Quarantine No. 63 was shattered when blister rust was found on a six year old white pine and two Ribes were discovered that had been overlooked in previous inspections. It will probably be two or three years yet before any Connecticut nurserymen will qualify for interstate shipment of white pines since the Federal quarantine requires the trees to be grown from seed in an approved Ribes-free zone or else grown in a Ribes-free zone from young stock obtained from a nursery certified under this quarantine. Since issuing the order creating control areas, one other nursery has signified its desire to cooperate and it is expected that others will follow.

We feel that our nursery sanitation project is worth while because it assures considerable Ribes eradication, encourages the growing of disease-free stock, and permits us to do a piece of service work for the Connecticut nurserymen, who individually and collectively have shown a splendid spirit of cooperation in our blister rust control program. Incidentally the survey has show the need of a State law banning Ribes nigrum and it seems likely that such a law will be enacted this winter.

Oct. 15. J. E. Riley - Conn.

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SCOUTING FOR BLISTER RUST IN MARYLAND, VIRGINIA AND WEST VIRGINIA

In order to determine whether the blister rust had spread south of Pennsylvania, where it had been located in 1927, a scouting trip was made by automobile in September, 1928. This was carried on at first in northeastern Maryland by Charles T. Geiser, who was joined on September 17 by R. G. Pierce. Previous to this extensive automobile scouting, intensive scouting had been carried on by Pierce in Augusta County, Virginia and near Parsons in Tucker County, West Virginia. Scouting was carried on in a 50 mile strip just south of Pennsylvania, extending from Cecil County, Maryland on the east to Monongalia County, West Virginia on the west.

No blister rust was found either on white pines or Ribes throughout the trip though 2,571 Ribes were examined at 329 places, and 1,217 white pines were examined at 91 places. Examinations were carried on in 9 counties in Maryland, 12 counties in West Virginia, and 2 counties in Virginia.

It is interesting to note that European black currants were found in only 9 places, white pine and Ribes were found growing together in 19 places, 16 of these being in yards and 3 in woodlots.

Roy G. Pierce.

ERADICATION SEASON CLOSES

In Maine

Eradication season ended September 15, ending the worst season yet as far as bad weather is concerned. It was the limit, very discouraging for all of us. Rain-rain-rain, Foggy-foggy-foggy, Drip-drip-drip without end.

W. O. Frost, Maine

I noticed in the August Blister Rust News that Massachusetts and New York were experiencing exceptionally hard luck in having so much rainy weather this season. They are not alone in their misery. From the 15th of May to the 15th of September there were approximately 26.9 per cent of the working days which were rainy. This brought planting, hoeing, haying, and high water all together. And therefore blister rust eradication was all wet. Because of these conditions it has been almost impossible to get the farmers to cooperate in Ribes eradication.

J. MacG. White - Maine

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In Vermont

The Ribes eradication crew working in Windham County, Vermont, finished their work September 20. We had a very wet season and consequently there was a great deal of lost time on the part of the crew. Three crews worked in Vermont in September. Some Ribes leaves still remained on the bushes in sheltered places on October 15. In fact, infection on all Ribes this fall was very heavy.

S. V. Holden, Vt.

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THE ERADICATION SEASON IN NEW YORK

The Blister Rust season, as a whole, has been about the same as 1927. We were about a week later starting work this year than in 1927, but the work continued as long this fall as it did last year. In fact, we still have a few men engaged in Black Currant elimination work. During the month of September, at least the first half of the month, about forty foremen were carried on our payrolls. Some eradication work was in progress in all of the districts for the first payroll period in September, that is, from September 1st to 15th. All, however, discontinued work around that date, with the exception of one or two crews in Sullivan County, which continued work until September 29th. I will add that rainy weather interfered with our work during the month of August fully as much as in June.* When the tabulation of the records for our season's work is completed, we hope to be able to show as many acres protected as were covered in 1927.

October 11, 1928 H. L. McIntyre, N. Y.

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* See article by Mr. McIntyre on "Progress of Blister Rust Control work in New York State" in August Blister Rust News, Page 194.

BLACK CURRANTS AND SHEEP

In 1922, 1923 and 1924, I visited several times a large patch of cultivated black currants near Wevertown, N. Y. The patch, about 10 x 20 feet in size, was located just inside the roadside fence of a horse and cattle pasture, near an old cellarhole. The bushes were thrifty enough in 1924, and were used as a source for telia by Doctor Spaulding.

According to the owner (interviewed in 1928), the original bushes have been there as long as he can remember, or more than 50 years. He states that he began to graze sheep in this pasture recently and that within two years they had killed every black currant in the patch.

In 1927, I was unable to find a single living plant on the site they occupied in 1924. Found one small plant across the road, probably 30 feet from the original plants, either an escape or a sprout from a roadside cutting. Since the patch of currants were not eradicated, as far as I have been able to determine, it seems probable that the sheep were responsible for their disappearance.

In 1928, we found probably a dozen seedlings, undoubtedly escapes, in the cellarhole about 100 feet away. Most of these were seedlings of the current year, and therefore must have started from seed two or more years old.

A. E. FIVAZ

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BLISTER RUST CIRCULARS DESIRED IN SCOTLAND

A request has just been received from Mr. G. G. Hahn of the Office of Forest Pathology who is studying forestry diseases at the Royal Botanical Gardens, University of Edinburgh, for a half dozen copies of Miscellaneous Publication 22, the new illustrated blister rust leaflet.

Mr. Hahn seems to have made himself thoroughly at home for he writes:

> "I want one copy for the Duke of Atholl who is so very much interested in forestry here in Scotland. White pine I do believe can be grown here in Britain if due precautions are taken."

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QUARANTINE ADMINISTRATION

The following Blister Rust Control employees have been temporarily transferred to the Plant Quarantine and Control Administration. They will check up on the shipments of currants, gooseberries and white pines at various strategic places to apprehend any violations of blister rust quarantine:- D. R. Payne, Washington; Carl O. Peterson, Washington; Aaron H. Glasgow, Washington; Arthur J. Lambert, Maine; Edward J. McNerney, Massachusetts and Charles E. Baker, New York.

NOTES FROM NORTHWESTERN CONNECTICUT

Special examination of the Pioneers Cemetery just off the state road from Cornwall Plain to west Cornwall failed to disclose any Ribes in the immediate vicinity. This little plot of ground is hidden from the passers by by a bank and hardwood undergrowth, but from it one can see the road well enough. About twenty tall slender pines some six to eight inches in diameter and one old seed tree shade the spot where the pioneer dead, were laid to rest from 1731 to 1761. Except for a new stone and wire fence recently erected by the men's club of Cornwall one would scarcely associate the spot as being a cemetery, but the bronze plate states that the field stones are head stones and that one of them is for Joseph Allen father of Ethan Allen, Col. Ira Allen and two other sons who put Vermont on the map. Col. Ira Allen who has been credited with being responsible for the separation and creation of Vermont was born in Cornwall.

WEATHER CONDITIONS PERMIT LATE ERADICATION

As some recompense for an unusually wet summer crews have been working successfully into the second week of October, weather conditions being fine and the Ribes leaves at Cornwall Bridge at elevation of 400 to 500 feet hanging on very well.

Whether the claim is a serious one or not we cannot vouch but simply report that there is a sentiment or theory (or what you will) that the growing quantity of hardwood trees and brush has "short-circuited" the Litchfield County weather and caused undue precipitation. Weather conditions in eastern Mass. and R. I. are reported to have been much better this summer. As protectors of the pine we may be slow to dispute the theory that pine trees throw less moisture into the air and that deciduous forest conditions should be somewhat checked in favor of conifers if the region is to retain its popularity as a summer resort section.

BLISTER RUST EFFIGY MAKES A HIT AT DANBURY FAIR

But to change the subject and to lay aside all that is not serous and strictly scientific, we must report that the thousands who visited the great Danbury Fair were rewarded with a view of the great pathological criminal Old Man Blister Rust as depicted by the New York and Lime Rock artist and sculptor Geo. N. Moore former (and temporary) Ribes Hound. A card advised the multitude that the Demon Blister Rust a native of Asia, had been apprehended, tarred and feathered and that the support of the public was desired to run him out of the State rather than to have him turned loose in the pine lots of the State to strangle and destroy the pines. As a "ballyhoo" the plaster of paris personification of blister rust was a "wow". A bust figure with brown leonine head, red "rheumy" eye lids, distorted nose and mouth bearing aloft a currant bush in one fist and a pine branch in the other he secured the attention of every passer-by including one or two with "Help the Blind" signs. On his shoulder where his mouth could have reached it easily, - if he had been alive, - was a cankered pine trunk with one of the familiar yellow tags. The public had to stop a minute to see what it was about and a large part of the crowd did stop long enough to read the tag and the small

poster. As the effigy weighed well over two hundred pounds we had sympathy with Brigham's hope, as he departed for Stafford Springs Fair with the "Demon," that he would lose him off before he reached the Connecticut River.

E. D. Clark, Conn.

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RIBES ERADICATION IN WISCONSIN

The Ribes eradication season of 1928, was one of the most successful in recent years, although only a small area was covered by the eradication crew. Only five men were employed, but all of them had some experience in blister rust control work previous to the time crew work was started on the 1st of August. The foreman, Mr. J. R. Jacobson, was well qualified because of his experience in that position in former years. The eradication work was satisfactory from start to finish.

In the Menomonie area in Dunn County much of the work was done on steep hillsides along ravines and on almost perpendicular ledges along Wilson Creek. The total timber area actually eradicated by the crew in line formation was 270 acres. A total of 70,150 Ribes bushes were uprooted at a cost of $742.50 exclusive of overhead. In size the bushes range from small to large, the majority being medium. The great majority of the bushes were R. cynosbati. Only four or five Ribes bushes were infected with blister rust. In places large white pines were numerous, in others they were scattering among hardwood. Small pine reproduction was sparce because of dense shade in most places. The woods were sparsely pastured.

The range area comprised two woodlots, one of 20 acres and the other 45 acres, about two miles apart. The smaller one was heavily pastured, containing considerable large and small white pine trees of which some were infected with blister rust. The larger woodlot contained scattered large and small white pine among hardwood. It was moderately pastured. Ribes bushes were not very numerous, and only a few were infected with blister rust. In both woodlots nearly all of the Ribes bushes were R. cynosbati. In this area of 65 acres a total of 7,330 bushes were eradicated at a cost of $84.00 exclusive of overhead. In size the bushes were fairly large. The work was finished on August 18, and no eradication as crew work was performed thereafter in 1928.

H. J. Ninman, Wisconsin.

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RIBES ERADICATION IN CHEBOYGAN COUNTY, MICHIGAN

Eradication work started on July 31, and was concluded on September 25. Approximately 10 days were lost due to rain and 5 days for other reasons.

In all about 1500 acres were put under control and 75,679 bushes were destroyed. This total includes all cultivated Ribes within the area under control with the exception of one property owner who is to move his bushes to another section immediately. The total cost of eradication in Tuscarora Township, Cheboygan County, including supervision, amounted to 46¢ per acre. The original estimate for eradication given to the Township Board was 50¢ per acre.

D. J. Stouffer.

A TRUE STORY

The other day a certain little girl came rushing into the house and announced to her mother in no uncertain tones that she was going chestnutting with Beatrice and some other girls. I was sitting at my desk and heard the conversation. For a moment a tingle ran up my back as it came to me what joy that word "Chestnutting" meant when I was a boy and how we roamed over the hills after the first hard frost in quest of this prize.

But on a second thought I interrupted her teasing her mother by saying that there were no chestnuts any more, that they had all been killed by the blight. To this she would not listen but kept saying that Beatrice's mother had gone there when she was a girl and had gotten lots of them. So they went. And I knew the disappointment that was sure to follow.

Late in the afternoon the party returned, my youngster carrying a paper sack full of hickory nuts with the big thick shucks attached. My wife and I both praised her powers but really I felt sorry for her for I realized then that one of the joys of her young life had forever been taken from her - going "Chestnutting".

H. G. Strait, N. Y.

Edit. - The work of the Blister Rust Control Agents who are responsible for getting rid of the currants and gooseberries and in this way are protecting the pines from the rust, will prevent a similar unhappy occurrence to the children in the future. Our control work will enable the little girl and little boy to play in the beautiful pine grove and enjoy the fragrance of its needles.

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NEWS MATERIAL DESIRED

The Blister Rust News is a family affair in which news of our force is welcomed, as well as news of their work.

Our work is forest protection - with the emphasis on the protection of some of the most valuable of the forest trees of America - the five leaved pines. To avoid adverse criticism we should deal almost exclusively with our control work or with the two hosts of the blister rust. If you will look over the back files of the Blister Rust News I think you will agree that we do hue closely to the line.

Some contributions from the field force have, therefore, had to be omitted as being entirely foreign to our work. Others have had to be cut down and changed. If this seems to hit you, please buck up and send us another contribution on blister rust control, news which will pass muster with the "Powers That Be".

Roy G. Pierce

DOG DAYS ADD IMPETUS TO GROWTH OF PINES

Recently while inspecting a white pine plantation in the town of Duane with Mr. Filler, Mr. McIntyre and Agent Ben H. Nichols, it was noticed that many of the trees had started an additional whorl and leader growth immediately on top of the present current year's growth. In some cases the new leader had grown from eight to ten inches, and the side branches of the new whorl from two to four inches.

The same condition was observed a few days later in the towns of Dickinson, Franklin County, and Hopkinton, St. Lawrence County. Here the new growth occurred on both white pine and Scotch pine, but was quite a bit less vigorous than in Duane.

A probable explanation of this phenomenon is the season's excessive rainy periods followed by warm, sunny days. The prevalence of this condition on eastern and southern margins of the plantations showed that it favored these exposures. To date I have not seen a single instance where pines growing in any amount of shade have put on more than one growth whorl this season.

W. F. Pratt, Franklin County, New York.

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WHITE PINE IN VERMONT

The annual cut of white pine is 13,781,000 board feet. In amount manufactured it stands in third place with 15,093,000 board feet. The commercial stand of white pine in this state are found in the Connecticut River valley, the Champlain valley, the southwestern part of the state, and in the valleys of the streams and rivers draining into these areas. Practically all of the good virgin white pine has been cut. The second growth white pine is of poor quality and, as a rule, much of it is found in open grown stands.

White pine is a valuable wood because it is soft, light in color and weight, and is easily worked. It is used in the manufacture of boxes and crates, shade rollers, toys, caskets, finish, refrigerators, musical instruments, pattern stock and dairymen's supplies such as butter boxes. It has numerous other minor uses. Practically all of the white pine for pattern stock and shade rollers comes from outside the state. This is because white pine of a quality such as is demanded for these purposes cannot be found in sufficient quantity in Vermont.

The successful growing of white pine is dependent on the control of the blister rust. This disease attacks and kills all sizes of white pines. This disease spends part of its life on the white pine, and part on the currant or gooseberry bush. The disease will not spread from pine to pine. Thus the spread of the disease in a pine stand may be prevented by the removal of all the wild and cultivated currant and gooseberry bushes within the stand, and up to a distance of 900 feet from it.

WHITE PINE IN VERMONT (Cont'd)

The average price paid for native white pine logs at the mill is $18.25 per M board feet. The range price is from $13.00 to $30.00 per M board feet. The value of the annual cut in logs at the mill amounts to $251,546.00.

Robert M. Ross and Perry H. Merrill
Vermont Forestry Publication No. 32.
1928

EXPERIMENTS WITH CLASSES OF STOCK SUITABLE FOR FOREST PLANTING IN THE NORTHERN ROCKY MOUNTAINS

Summary

The results of the experiments with western yellow and western white pine showed that, other factors being equal, large stock survived better than small stock that transplants are usually preferable to seedlings, that stock with roots 8 inches long or longer succeed better than stock with shorter roots, and that a low top-root ratio indicates better planting stock than a high ratio.

A high proportional survival was found in the older age classes of both species. In one planting upon northwest, west, and southwest slopes, 1-2 stock of western yellow pine grew most rapidly from the start and also appeared the most economical from the standpoint of the cost per unit of surviving trees. In another test, comparing survival of two age classes, 2-1 stock did better than 1-2 ,but 1-2 still remained the more economical. In one western white-pine planting 1-2 stock ranked superior to 2-0. In another planting of white pine in which 2-2 stock was used, this stock had the highest survival, with 1-2, 2-1, 2-0, and 1-1, in descending order. Upon the basis of cost per unit of survival 2-0 white pine stock appeared most economical on moderate sites, but on the more severe sites 1-2 stock, or possibly 2-2, proved the least expensive.

In several experiments with size classes large stock of western yellow pine survived better than small stock on severe sites. Medium-sized stock appeared best on favorable sites. When western white-pine stock graded into four size classes was planted, only the smallest class resulted in poor survival.

When 1-2 western yellow-pine stock was pruned to furnish root lengths of 10,8,6, and 4 inches, highest survival attended the stock with 10-inch roots. The survival declined quite uniformly with the decrease in root lengths regardless of whether the stock has been sorted into size classes so that the root pruning was in proportion to the total size of the stock or not. Roots 8 inches or longer seemed best.

In general the season of planting appears to have slight effect upon survival.

W. G. Wahlenberg in
Jour. of Agri. Research. June 15, 1928.

AMONG OURSELVES

Mrs. Lena Blake in charge of the File Room, Washington Office resigned October 15. She was given a farewell luncheon by fellow employees at Woodward and Lothrop's tea room. Misses Thompson and Sargent now of Plant Quarantine and Control Administration were also present.

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Mr. J. M. Palmer of the Washington Office took part in a Department of Agriculture Golf Tournament at Beaver Dam Country Club on October 2. Secretary Jardine and Bureau Chiefs C. L. Marlatt and Paul G. Redington also participated. At the termination of the tournament the Secretary presented the prizes, one of which went to Mr. Palmer.

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Al Fivaz, after dabbling in pines all summer, returned to Washington September 30, and knocked the maples for a score of 139. How's that Endersbee and other good bowlers? No mention is made of the other scores which Al made the same day against Avery and Palmer.

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Wedding announcement! An announcement has just been received of the marriage of Miss Dorothea Wells to Mr. George Stanley Doore on October 11, at the Cathedral Church of St. Paul in Boston, Massachusetts. Mr. Doore is Agent in charge of blister rust control at Greenfield, Mass. Congratulations, Doore.

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The Washington office had the pleasure of seeing Eddie Holland (former accountant). He has been in the hospital in New York since spring and seems to have recovered his health. Eddie and his wife were present as guests at a luncheon given to Mrs. Leolia Halper at Schneider's Cafe. Mrs. Halper joins the office of the Editor for Plant Industry.

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Mr. and Mrs. Arthur Lambert of Augusta, Maine, are receiving congratulations on the birth of a son. Richard arrived October 4.

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A daughter, Ann Marie, was born to Mr. and Mrs. S. D. Conner of Portland, Maine, on September 27. Congratulations.

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Roy G. Pierce and Charles T. Geiser returned to Washington September 29 from a scouting trip through northern Maryland, Virginia and West Virginia.

PUBLICATIONS

Blister Rust

Anon. - Blister rust quarantine regulations are modified. Florists Exchange. Aug. 11, 1928, p. 297, Vol. 68, No. 15.

Detwiler, Samuel B. Black currant spreads white-pine blister rust. Miscellaneous publication no. 27. U. S. Dept. of Agriculture, July, 1928. 8 p. illus.

Martin, J. F. Protect white pine from blister rust : eastern edition U. S. Dept. of Agriculture, Miscellaneous Publication No. 22. April, 1928. 8 p. illus.

Ross, Robert M. and Perry H. Merrill - A paragraph on white pine blister rust. Reference is made to this disease under the heading of White pine on pages 18 and 19 of Vermont Forestry Publication No. 32 for 1928.

White Pine

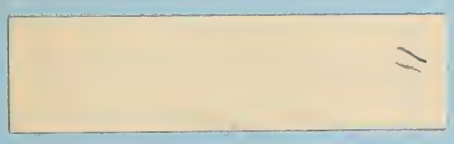
Newman, L. E. White Pines of the United States. New Hampshire Forests. Vol. 5, No. 3, September, 1928.

Newman, L. E. White Pine Supports a New Hampshire Industry and Community. New Hampshire Forests. Vol. 5, No. 3, September, 1928.

Ross, Robert M. and Perry H. Merrill - White Pine. Page 19 of Vermont Forestry Publication No. 32, 1928.

Wahlenberg, W. G. Experiments with Classes of Stock Suitable for Forest Planting in the Northern Rocky Mountains. Jour. of Agri. Research. Vol. 36, N . 12. June 15, 1928. pp. 977-1000.

Wiant, J. S. Soil treatments for the control of damping-off in coniferous seed-beds. Phytopathology, 17 (1927), No. 1, pp. 51,52. Experiments are briefly reported on the control of damping-off of conifers in seed beds, the principal organism causing the destruction of the seedlings being Rhizoctonia solani. Effective control was secured with chlorophenol mercury, mercuric chloride, and nitrophenol mercury in beds of Pinus strobus and Picea excelsa. In beds of Pinus resinosa satisfactory results were obtained with aluminum sulfate, uspulum, mercuric chloride, Bayer Compound, and sulfuric acid. Few differences were noted in the effectiveness of the different control agents.



BLISTER RUST NEWS

November 1928.

Volume XII

Number 11

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

Vol. 12, No. 11. November 1928.

PRELIMINARY NOTE ON MICHIGAN SCHOOL SURVEY

The following is a preliminary note on the results of the survey for the white-pine blister rust carried on through the Michigan Schools this fall:

Total number of packets sent out -	7,189
Reports returned to this office to date -	477
Packets returned - wrong address -	17
Reports containing infected leaves -	19
Total counties infected -	14
New counties found infected -	10
Counties infected in Upper Peninsula -	5

The counties in which infection was found for the first time, through the school survey, are Baraga, Dickinson, Gogebic, Keweenaw, and Marquette in the Upper Peninsula, and Charlevoix, Gladwin, Iosco, Missaukee, and Roscommon in the Lower Peninsula.

Infection found in Montcalm and Newaygo Counties.

I have just returned from a field trip during which I found infections on black currants in Montcalm and Newaygo counties.

In some sections I found Ribes leaves nearly all off and in others the leaves were nearly all in place yet. The red currants were nearly all defoliated while the European blacks held their leaves very well.

Nov. 15, 1928. D. J. Stouffer, Michigan.

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BLISTER RUST CONTROL IN NORTHEASTERN CONNECTICUT.

We opened actual scouting on May 15 with two men; made very slow progress at start on account of rain. This I think has been the general condition found by most agents in New England. Despite adverse weather we cleaned up several areas that were heavily infected.

I have used two scouts in this section from May 15th until October 17th when lack of foliage made it impossible to locate all Ribes successfully.

Seven-man Crew.

During the period from May to September I have used crews of from two to seven men as conditions warranted. I find that the seven-man crew speeds up eradication as it gives two checkers to work back of line and eliminates a lot of rechecking by entire crew.

Infection Heavy in Union.

Pine infection has been located in every town in Tolland county, while in the town of Union areas have been located that will run as high as 75 percent infection to the acre and the disease can be found spotted in most of the pine stands of the town, and I think it safe to say that 40 percent of the standing timber in the town is pine.

Blister Rust Phenology.

I did not get into the field in this section before May 1st and at that time went directly to a plot where pine infection had been noted and found that the aecial stage was well developed, the uredinial stage on Ribes was noted on May 25th, while the telial stage was noted the latter part of August.

Ribes Note.

Ribes hirtellum in this section is the more abundant species while rotundifolium has been found most heavily infected. In some instances we have found members of the latter with hardly a leaf that was not covered with infection. Good Cooperation in Union.

A rather unusual note is that the town of Union comprises about nine thousand acres. Two cooperators in this town own between five and six thousand acres between them, and have had their entire holdings scouted and where crew work was necessary have supplied all men needed. I was recently asked by a Selectman what it would cost the town to have the balance scouted and all Ribes removed. That's cooperation in Union.

Oct. 29, 1928. A. S. Brigham, Conn.

SUMMARY OF BLISTER RUST CONTROL IN RHODE ISLAND
1927 and 1928.

Year	Total Acreage Scouted	Total Ribes Eradicated	Cost Per Acre	Average Ribes Per Acre	Per Cent of Working Hours Lost By Rain	Duration of Working Season
1927	9,735	22,279	$0.175	2.28	10.6	April 28 to July 30
1928	21,461	18,392	$0.1191	.85	15.3%	May 7 to Sept. 15

A crew of five men, four scouts and a foreman, were employed in 1928 as in 1927. These men scouted for and eradicated currants and gooseberries in the townships of Scituate, North Smithfield and Goddard Memorial Park, Warwick. In addition to this eradication, cultivated black currants were eradicated in the township of East Greenwich and in a section of Smithfield in and about the villages of Esmond and Georgiaville. A total of 127 cultivated black currants were found and destroyed throughout the summer. While the average number of Ribes per acre is small, the bushes occur quite abundantly in patches and in such places are capable of causing severe damage to pines locally.

A. W. Hurford, Rhode Island.

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BLACK CURRANT ERADICATION IN LEWIS COUNTY, NEW YORK.

Black currant eradication has awakened some of the people in Lewis County to the seriousness of the white-pine blister rust. During the past season, the village of Lowville was scouted systematically for black currants. The village was divided into quarters by using the two main streets as dividing lines. Each quarter was carefully gone over.

One and sometimes two foremen were stationed at Lowville during the entire season and on rainy days worked at black currant scouting. After the wild-Ribes eradication was completed, two foremen were used about a week and a half finishing the eradication in the village. Many "pet" black currants were removed and on the whole, no great remonstrance was made by the owners. Early in the spring a notice was put in the local papers quoting the State law in re black currant and advising that eradication work would be done in the village during the summer. Many owners called the Blister Rust Agent and advised him they had black currants on their premises.

Over 1700 bushes were removed from the village and many of them were heavily infected with the blister rust. The State Nursery which is a short distance from Lowville and where many millions of white pines are growing, was in imminent danger of infection as long as the village was loaded with the cultivated black currants. The danger of infection from this source is entirely removed and the planting of black currant will practically cease.

I. S. Bowlby, New York.

WILD CURRANT BUSH GROWS IN BIGTREE

Shrub Makes Home 80 Feet from Ground in Crotch of Grizzly Giant.

Tourists who this year have visited Yosemite National park talk much of the wild currant bush that has made itself a strange home in a crotch high up the trunk of the Grizzly Giant, grand old sequoia tree of that scenic playground. The bush finds a place to grow at a point 80 feet from the ground, where this monster tree thrusts out one of its gnarled limbs. Here, through the centuries litter has lodged until enough of it has accumulated to support plant life. Into this some bird had dropped a wild currant seed. It has germinated and is growing vigorously. Thus strangely silhouetted, its light green leaves contrast strikingly with the somber background of the foliage of the giant.

For size and age the Grizzly Giant lends precedence only to the General Sherman and the General Grant, venerable trees of Sequoia and General Grant National parks. Its age has been estimated at about 4000 years. It is 204 feet tall and has a diameter of 30 feet. *****

Oct. 14, 1928. From "The Sunday Oregonian", Portland, Ore.

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HAHN SHIPS RESISTANT VARIETY OF RIBES TO AMERICA

A letter has just been received from Mr. G. G. Hahn, Edinburgh, Scotland, stating that he has already shipped to America 1,000 cuttings of the Norwegian Red Dutch Currant (Röd Hollandsk drüerips). These were received from Ås, Norway. This Norwegian Red Dutch Currant has been found by Mr. Hahn to be very resistant to the blister rust and the plants which are being shipped will be tested for immunity to the disease in this country. If this species proves to be as resistant to the disease here, it may help solve the problem of eradicating cultivated currants on control areas.

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SUMMARY OF CONTROL WORK IN NEW YORK FOR 1928

Despite the adverse weather conditions occurring this year we protected over 95,000 acres during the past year. To be exact, we had 966 cooperators, cleaned up 95,849 acres, and removed 1,964,604 Ribes. This does not include the Ribes removed in connection with our special work, nursery sanitation, either that done by Baker and Strait, who were engaged in that line of work during the season, or the cultivated Ribes removed in special drives made by the other agents.

H. L. McIntyre.

NEW HAMPSHIRE AGENTS MAKING WHITE PINE SURVEY

The agents in New Hampshire are at present busily engaged in making an intensive pine survey in the few New Hampshire towns which have so far either failed to cooperate with the State in the control of blister rust, or have allowed their control program to lag.

This survey contemplates the location of the main pine areas in each of the towns being surveyed for the purpose of enabling the agents and the state office to put up a definite program of control to the people in these towns. It will be possible to advise them of the acreage to be covered and the approximate cost of the control work, the town's share and that of the State. It is thought that by thus boiling the control program down to minimum requirements it will be possible to secure the cooperation desired. The results of this work will be made known to the readers of this paper at a later date.

Nov. 14, 1928. T. J. King, New Hampshire.

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INTERESTING INFECTION DATA FROM NEW HAMPSHIRE

In connection with the pine survey the writer has managed to do more or less scouting for the disease on pine. He has found that in Francestown the oldest infection was of 1908 origin, the first heavy infection occurred in 1921 and the second heaviest infection in 1924 - in fact 1924 seems to be the year of heaviest infection. In the town of Deering and abutting Francestown, the oldest infection found was of 1915 origin; the first heavy infection was 1919; the second heaviest infection 1924, although infection seems to have run fairly near the same from 1920 to 1924, inclusive.

Nov. 14, 1928. T. J. King, New Hampshire.

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MICHIGAN NEWSPAPER ARTICLE BRINGS INQUIRY CONCERNING PROTECTION OF VALUABLE PINE.

A recent letter has been received from a Detroit lawyer stating that he had seen an article in the Roscommon Herald News of Roscommon, Michigan, that the white pine were endangered by blister rust, and that he was anxious to obtain information concerning this disease. His letter states that he is greatly interested in the problem of preserving pine trees as he has a tract of virgin timber in which he is locating log cabins.

Edit.-The above inquiry is interesting in that this particular tract of virgin pine is considered more valuable for its recreational use than for timber. I believe that for a number of years in the Lake States that this use of white pine will be the best means of putting blister rust across to the public.

BLISTER RUST CONTROL IN SULLIVAN COUNTY, NEW YORK.

Previous to 1927 it was thought that there was very little white pine in Sullivan County. During that summer H. A. Williams, who was at that time Blister Rust Agent, located at Oneonta, made a hurried trip through the county and to his amazement found considerably more white pine than the county was credited with. The cooperation of some of the white pine owners was soon secured by Mr. Williams and in a short time the eradication work got under way.

Although the eradication program was not started until late in the summer of 1927, the Ribes on something over three thousand acres were eradicated, and eleven cooperators secured. During the past season over four thousand acres were covered, with twenty-five cooperators. There still remains a considerable amount of unprotected white pine in this county. Possibly there is as much more to be protected from blister rust as has been covered in the past two years.

Considerable difficulty is found in getting cooperation, principally because the white pine owners are mostly non-residents, at least of the county. It is only during a short period in the summer that most of these owners are expected in the county, and where they can be found during that time has not yet been solved.

This county abounds with abandoned farms with wonderful opportunities, it would seem, for reforestation work. Although white pine has been found infected by white pine blister rust in this section, the disease does not seem to be very generally established here yet, and white pine can undoubtedly be grown with little cost in protecting it against blister rust.

There are still a few remaining virgin pines in the county. We have found some of maybe 6 or 8 feet in diameter which rise from 40 to 60 feet before the first branches are found.

Oct. 23, 1928. H. E. Blanchard, Foreman, N. Y.

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WHITE PINE BEING ATTACKED BY BEAVER

White pine seems to be like many unfortunate people - something or someone is always trying to hinder progress. It isn't enough to have blister rust, white pine weevil, and other diseases and insects, but now the beaver is destroying the pine. In Sullivan County the work of beavers may be seen in great quantities. Hundreds of acres of land have been dammed and flooded by them. Every brook and brooklet in the vicinity of beaver works has several dams to control the water for the larger dam. Most of the poplars, some of the birches and hemlocks have been cut and dragged 100 feet or more to build with.

It was while engaged in white-pine blister rust control work in one of these flooded areas that I noticed the white pine had come in for its share of destruction. The bark around the base of some of the larger pines had been stripped off, which of course killed the tree. In places where young trees

were coming up, they had been cut off about 5 or 6 inches above the ground. The beavers use them to make their dams water-tight before they pack them with mud, as I found upon examining a dam under construction.

The beavers in this section have little or no fear of humans, as I saw three in about twenty minutes. They swam leisurely out to deep water and disappeared.

Oct. 23, 1928. William Masterson, Foreman, N. Y.

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COMPARISON OF THE ERADICATION SEASONS OF 1927 AND 1928. IN WISCONSIN

Regarding weather conditions it is worthy to note that the season of 1927 was drier than that of 1928 during the eradication period which extended over practically the same time in both years. Nevertheless, more time was lost because of rain last year than this as last year several storms occurred during working hours, whereas this year the heavy storms came outside of the working hours.

When rain storms occur just before the men are to leave the tent, there is always valuable work to be done during storms in doing delayed repair work, such as repairing the State auto, renewing worn-out pick handles, rearranging lodging equipment, and summarizing data by the foreman. The same applies when the crew can reach the tent before the close of the day when a storm is approaching. No time is lost in such cases.

The circumstances under which the crew worked in 1927 were much different from those under which the crew worked in 1928. Practically all the ground worked last year was flat, and large bushes, averaging about twenty feet of live stem, were numerous, while this year the bushes averaged approximately seven feet of live stem and the ground contained large areas with deep ravines and steep ledges where a rope was sometimes necessary to aid the worker in keeping his footing on ledges. Last year the crew, excepting the foreman, started to work without previous experience, while in 1928 all the crew members had had experience, the linemen with one exception being the same as last year. Although there was more undergrowth this year than last the crew covered ground faster on flat surface than they did in 1927 because the bushes were much smaller and because of their previous experience in working together in line formation.

Oct. 17, 1928. H. J. Ninman, Wisconsin.

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In 1743, white pine growing upon any soil or tract not granted to any private persons, and measuring 24 inches and upwards in diameter at 12 inches above the ground, was protected by special law, and reserved for masting the royal navy.

NEWLY MADE PLANTATIONS SHOULD BE MARKED FOR PROTECTION.

Almost every year after the annual hay harvest is over reports come of cases where through failure to mark the recent forest plantation the young trees have been mowed off. Oftentimes hay land is let out to a neighbor or some other party who is entirely ignorant of the fact that little forest seedlings or transplants have been set in a certain portion of the field and as a result they are mowed off. Where these young trees are set in places where hay is likely to be cut certainly the borders of the plantings should be marked with appropriate signs or markers. The city of New York on their planting site around Balboa Reservoir have placed signs asking the people not to molest the young trees which will eventually become forests to the enjoyment of all. I believe this is a fine idea. As a suggestion why not include along with the order of trees sent out from the State Nurseries some small markers or signs to be placed around the plantings. They would help to advertise the reforesting idea and at the same time serve as a marker against possible damage by thoughtless trespassers.

Eradicated Areas Are Being Marked.

This idea is being carried out in blister rust control work. After a field or piece of pine has been protected signs are placed to tell the passer-by that protection has been given the pine against blister rust. It is a way of advertising to receive direct results.

Nov. 8, 1928. H. G. Strait, New York.

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WEALTHY NEW YORKER WILLING TO TRY ANYTHING. (INCLUDING BLISTER RUST CONTROL)

The other day while making a call at the country home of a well-to-do New Yorker and enjoying his hospitality in various ways, among them being a treat to a fine cigar, he called my attention to a rough wooden box in his den wherein was some reddish looking leaves quite well dried.

"Know what that is?" he questioned.

"Looks like sumac", I said.

"Yes, sir", he came back, "Indian Tobacco".

He smiled and so did I. He was evidently thinking the Indian might have had an "edge" on him in the line of a real smoke, and was determined to see for himself. This man never had to be urged to become a cooperator in blister rust control. He was convinced that if others had done it there must be something to it and was willing to give it a trial. This fall the Dutchess County 4-H Club held a forestry field day there and in going over the plantings of white pine he told them that he had a clean bill of health for them as he had protected them from blister rust. He evidently was satisfied that in giving it a trial he had accomplished something that was lasting and worth while.

H. G. Strait, New York.

SOME OBSERVATIONS INCIDENTAL TO FRUIT COLLECTION AND SEED EXTRACTION OF TWO SPECIES OF WILD RIBES

During the 1925 field season considerable collecting of Ribes fruit was carried on by the writer in connection with studies having to do with the control of white-pine blister rust, for the New York State Conservation Department. The studies were made under the direction of Dr. H. H. York, Forest Pathologist of the Department. The collecting was done in Essex County, N.Y., during the latter part of August and was confined principally to Ribes rotundifolium Michx., and R. cynosbati L. Berries were taken from bushes of many different types, growing under a variety of conditions.

For the purposes of the experiment it was desirable to obtain seed free from pulp. Experience in previous seasons had shown that mashing whole berries through a sieve was not entirely satisfactory due to the presence of the tough epicarp or skin, and in R. cynosbati, of prickles. Mr. W. Fuller, an assistant, who did much of the work of extraction in 1925, found that the seed could be extracted practicably and more cleanly by puncturing the skin with a dissecting needle, squeezing out the pulp and seed and washing the latter, as it accumulated, through the sieve. This process left nothing but clean seed, and was faster, once the routine was established, than might seem from the description.

It was decided to obtain some data as to the number of berries per unit weight and volume, and the number of seeds per berry, to serve as a guide in future collecting. Since these counts were taken primarily for practical purposes, only the general run was noted and no attempt was made to correlate number of seeds with size of berry or make other refinements which would have been desirable from a botanical point of view. It is felt, however, that the data as they stand may be of some general interest.

About 4½ quarts of berries were collected, weighing 4 pounds and 5 ounces. (When these measurements were taken on September 1, some of the berries had been in storage for upwards of a week; hence the volume figure is somewhat lower than it would have been had all the berries been perfectly fresh.)

The following brief table shows the results obtained with two species:

Species	Total No. Berries	Average No. per Quart	Average No. per Pound	Total No. Seeds	Average No. Seeds per Berry
R. rotundifolium	4237	2119	2179	30,070	7.1
R. cynosbati	2145	831	890	16,617	7.7
Total	6382	1393	1464	46,687	7.3

It will be noticed that a quart of the berries weighed approximately a pound, and that the average number of seeds per berry was not materially greater in the case of the R. cynosbati in spite of the larger size of these berries. This was due apparently to the larger size of the seed in this species. The number of seeds per berry in both species varied from one or

two up to 15 in R. rotundifolium and 22 in R. cynosbati.

Occasional measurements of individual berries were made as the work progressed. (Only berries in fresh condition were used for these measurements.) From these observations it appeared that the Ribes rotundifolium had a range of 3-10 mm. in longest diameter with a general run of about 6mm; the R. cynosbati ranged from 8 to 14 mm. (not including prickles), with a gereral run of about 11 mm.

Winton, (1), who published some observations on the anatomy of Ribes fruits and other berries, did not study the species discussed here but states that a cultivated variety of R. oxyacanthoides L. had berries ranging from 10-20 mm. Berger, (2), gives the size of Ribes rotundifolium as 6-8 mm.; that of R. cynosbati as 8-12 mm. Britton and Brown, (3), state that R. rotundifolium is usually not more than 8 mm., and that R. cynosbati may be 8-13 mm. The writer has observed R. cynosbati fruit 17 mm. in diameter. Winton does not mention the number of seeds in gooseberries but gives the seeds of R. rubrum L. as 1-8 in number, and those of R. nigrum L. as about 15.

In the observations made by the writer the seeds of R. rotundifolium averaged 1.5-2.5 mm. in length and 1.0-1.5 mm. in breadth; they did not pass through a 1.5 mm. square mesh. The seeds of R. cynosbati averaged 2-3 mm. in length and 1.0-1.5 mm. in breadth; in color they were a somewhat brighter red than the others.

References Cited.

(1) Winton, A. L. The Anatomy of Edible Berries. In Dept. of Conn. Agric. Expt. Sta., 1902, Pages 288-325.

(2) Berger, Alwin. A Taxonomic Review of Currants and Gooseberries. Technical Bulletin 109, N. Y. State Agric. Expt. Sta., 1924.

(3) Britton and Brown. Illustrated Flora, Charles Scribner's Sons 1897.

Nov. 13, 1928.

E. W. Littlefield,
New York Conservation Department.

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"Every tree is beautiful, every grove is pleasant, and every forest is grand; the planting and care of trees is exhilarating and a pledge of faith in the future; but these esthetic features, though elevating, are incidental; the people need wood."

James Wilson, Former Secretary of Agriculture.

Ed.- The control of the blister rust is vital if the white pine forests are to be continued as producers of wood.

BLISTER RUST INFECTION IN MASSACHUSETTS NURSERIES, 1927

Infection of white pine blister rust was found in two nurseries. In order that the larger nurseries of the State might be better protected against this disease, the Division is endeavoring to maintain a Ribes-free zone for 1500 feet around nurseries growing any considerable amount of white pine. As an additional precaution, all black currants are removed for a distance of one mile from the nursery. On April 1 the black currant was declared a nuisance in Massachusetts. In order to aid the eradication of this plant and to better acquaint the public with it, a circular was prepared and issued, and several thousand copies were distributed through the Massachusetts Forestry Association and the County Extension Services. It will probably be at least two more years before this work is completed.

The menace to the white pine forests of this country by blister rust, needs little comment to anyone who has had an opportunity to see this disease in operation. The greatest care should be exercised to check the spread of blister rust.

R. Harold Allen, Director
Division of Plant Pest Control, Mass.

Extract from the "Annual Report of the Commissioner of Agriculture for Massachusetts for the Year Ending November 30, 1927".

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ADDITIONAL OBSERVATIONS ON RIBES SEEDS

Ed Littlefield's manuscript on seeds extracted from Ribes fruit has just been read. I am submitting what little data I have on the subject so that, if it is accepted, it may be published along with Ed's, thereby keeping it all together. My work was with dried berries exclusively, and I found that dissecting individual berries with a scalpel was tedious business. For extraction of seed when the number in each berry is not an object, I found that scraping the oven-dry fruits through a stout galvanized wire screen with three meshes to 1 cm., was satisfactory. The finer particles of the berry and the inferior seeds are eliminated by using a screen with smaller mesh (1.5 mm. for G. rotundifolia), and the seeds picked out of the remainder with a brush or scalpel. In my work, only the apparently sound seeds were saved. Many small, shriveled, or apparently empty seed coats were discarded. All the data I have on the subject may be found in the accompanying table.

With reference to size of seed of G. rotundifolia. I found that a few of the smaller good seeds would pass through 1.5 mm. mesh. Comparative germination test of seed that passed through such mesh and seed that would not, showed after 38 days a germination of 7% for the former and 24% for the latter.

Nov. 14, 1928. A. E. Fivaz

TABLE 1. NUMBER OF SEEDS PER BERRY IN RIBES

Species	Date of Collection	No. of Berries Opened	Total Seeds Extracted		Number of Good Seeds per Berry			Per Cent of Total Berries Having						
			Good	N.G.	Minim.	Maxim	Aver.	0 Seeds	1-10	11-20	21-30	31-40	41-50	51-60
R. vulgare Lam.	1925	27	56	?	1	5	2	-	100%	-	-	-	-	-
R. glandulosum Grauer	May 26-28, 1919	5	25	?	2	7	5	-	100%	-	-	-	-	-
" "	July, 1921	19	252	?	4	28	13	-	26%	69%	5%	-	-	-
G. Cynosbati (L.) Mill.	Sept. 26, 1919	4	80	?	5	41	20	-	50%	-	25%	-	25%	-
" "	July 1921	8	318	?	24	54	40	-	-	-	25%	12½%	50%	12½%
" "	July 25, 1927	146	2,573	706	0	52	18	10%	22%	27%	27%	11%	2%	1%
G. rotundifolia (Michx.) Cov. & Brit.	July 28, 1927	131	1,463	?	1	39	11	-	54%	31%	12%	3%	-	-
" "	Sept. 14, 1927	300	2,952	?	0	36	10	.5%	63%	29%	7%	.5%	-	-
" "	" "	100	970	?	?	?	10	?	?	?	?	?	?	?
G. hirtella (Michx.) Spach.	July 1921	11	95	?	2	18	9	-	64%	36%	-	-	-	-

"WILDERNESS" AREAS ESTABLISHED

In the Rocky Mountain National Forest District 42 separate tracts of national-forest land have recently been set aside as "wilderness" areas. These areas have been selected as lands in which natural forest conditions should be preserved, either for scientific or for recreational purposes. In 13 small small areas on the national forests of Colorado, Wyoming, and South Dakota all forms of commercial or recreational use are prohibited in order to provide opportunity for scientific observation and research. One wild, inaccessible area of 100,000 acres in the Washakie National Forest, Wyo., is closed to commercial use and dedicated to recreation. The remaining 28 areas, comprising 2,451,020 acres in Colorado, Wyoming, South Dakota, and Minnesota, will be kept in a wild state in the sense that they will not be developed by road building or opened to occupancy under permit. They will, however, be subjected to grazing and timber cutting.

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WATERPROOFING SHOES

For waterproofing shoes that must be worn in the snow and dampness of winter the chemists of the United States Department of Agriculture recommend the use of one of the following formulas. Which to use will depend, as a rule, on the convenience of gathering or purchasing the materials:

Formula 1. Neutral wool grease, 8 ounces; dark petrolatum, 4 ounces; paraffin wax, 2 ounces.

Formula 2. Petrolatum 16 ounces; and beeswax, 2 ounces.

Formula 3. Petrolatum, 8 ounces; paraffin wax, 4 ounces; wool grease, 4 ounces; and crude turpentine gum (gum thus), 2 ounces.

Formula 4. Tallow, 12 ounces, and cod oil, 4 ounces.

To apply any one of the compounds, mix the ingredients thoroughly after melting. The mixture should be applied warm, but not hot, and to all outside parts of the boot or shoe. In the winter a slight excess over what the leather will absorb will do no harm. Grease with particular care the welt and the edge of the sole. Then saturate the sole with the waterproofing mixture. This can be done conveniently by setting the shoes in a shallow pan that holds melted grease enough to cover the soles. Do not put rubber heels in such a mixture. To waterproof the soles of rubber-heeled shoes put the mixture in a pie plate and let the heels hang over the edge.

Shoes so treated are not as waterproofed as rubber boots, but do afford a considerable measure of protection and resistance to wetness.

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PINE PLANTATIONS AND NEW ENGLAND FORESTRY *

By RICHARD T. FISHER
Director, Harvard Forest

Forestry began to be promoted in New England only a little over a quarter century ago. In that period the Federal Forest Service, the several associations, and later as they became established the state departments and forest schools have built up an immense campaign of education. This publicity has largely determined the popular conception of forestry and hence the direction of its growth. Almost from the start and with increasing unanimity the programs and propaganda have been centered on the planting of white pine. For this there were obvious reasons; the abundance of natural old field pine, its rapid growth and ready market, the adaptability of abandoned or failing farms to planting, and, as a question of advertising, the ease with which the setting-out of little trees could be dramatized to the public. Leaving out fire protection (not in itself productive), progress in forestry is more and more commonly measured by the number of seedlings produced, distributed, and planted. Implied by this and often directly expressed is the assumption of vast deforested or waste areas which must be made productive. In consequence it is the common belief, shared by most timberland owners and apparently even by some foresters, that forestry means reforestation, and that reforestation means planting, generally white pine.

It is axiomatic that sufficient wood production is in the long run a regional necessity, and that the right kind of education will help bring it to pass. Furthermore, if forestry is to be a live industry, not only must economic conditions permit timber to show a profit on its cost, but, in Colonel Greeley's expressive phrase, "the people must become forest-minded." In the light of these objectives and now that twenty-five years of silvicultural experience and economic developments have passed, it is timely to inquire whether the widespread emphasis on plantations of pine is a sound policy.

Pure pine stands both in natural woodlots and in plantations are silvically alike. At fifty to sixty years growth falls off rapidly, general health declines, and disease is frequent, especially red rot (Trametes pini). The soil tends to become impervious and unfertile under an increasing layer of raw humus and litter. Only low grade or knotty lumber is produced, and this poor quality is aggravated by injuries from the pine weevil, which is particularly damaging in the usual wide-spaced plantation. Blister rust, now widespread, is a matter of serious concern, and whatever may be said for control, the disease has proved most destructive in compact stands. Pure pine is a transition type, and except on the lightest soils reverts to hardwood or mixtures of hardwood and softwood. Viewed as a crop, the type, in spite of early rapidity of growth, is not in the long run productive, vigorous, or easy to maintain. Furthermore, there has been a gradual shrinkage in the use of low grade white pine, and western lumber has largely replaced the better grades of native softwood, not a large element in local production at best. Thus the price of box lumber - the main product of plantation or woodlot - is now almost

* Extract from "Journal of Forestry", October 1928, Vol. XXVI, Number 6.

thirty percent less than it was ten years ago, and considering the prospective supply and probable demand, it will be many years before the value will reach the previous high point.

These may be considered to be intrinsic defects inherent in the life history of the type and its relation to utilization. They have been greatly aggravated in the practice of planting by defects in method. The public has been supplied with thousands of cheap trees and told simply to plant them six feet apart. No special knowledge required. The results have been inevitable. There may be by now upwards of 75,000 acres of plantation in New England, most of it white pine. Because of poor stock carelessly handled and planted, or soil unsuitable for the species, or no account taken of competing vegetation, planting distance seldom considered, excessive weevil damage, and above all, no check on forest weeds or discrimination between weeds and desirable components of the stand - because in fact the formation and care of a forest is not a simple problem, an appalling percentage of existing plantations are too poor to repay their cost.

(To be continued in the next issue.)

NEW ENGLAND CONDITIONS

Percival White and Walter S. Hayward are the authors of "Can New England Come Back?" in The North American Review for November. The article says in part: "With two per cent of the Nation's area, with seven and a half per cent of its population, with forty percent of its savings, New England no longer has an industry in which her dominance is unquestioned. *****. The red school school house, with its windows boarded up; the abandoned farm, with only its lilac bush left to tell of happier years; the mill village, its water wheels still; its drab tenements deserted; its pavements grass-grown - this is one side of the New England of today. The New England which led the country, first in agriculture, later in shipping and commerce, and lastly in manufacturing, now counts its pennies and clips its coupons. ******. Opposed to this there is a large and ever larger body of opinion which would make over New England, and would have it hum as industriously as Detroit or Chicago. This opinion is becoming organized in the hands of capable leaders who are putting themselves at the head of a movement for the Renaissance of New England. ******.

"The forestry program, as outlined, is particularly interesting, since forests are regarded as the natural crop of most of New England. Crowded in population as it is, it still possesses three and two-tenths acres of woods per capita; even Connecticut having one and one-tenth acres. European experience has shown that eight-tenths of an acre per capita is enough to make a State self supporting as to timber products. While fire protection and control of forest pests are urgently needed, there is an even more urgent necessity to have forest taxation adjusted so that owners of forest land may hold their property over long periods.*******."

NEW HAMPSHIRE IMPROVES WHITE PINE STANDS.

New Hampshire foresters recommend that gray birch be cut out of well-stocked stands of white pine as soon as the pine appears to be severely shaded or rubbed by the overtopping birch. The first release cutting is usually done when the pines are about ten feet high - a second releasing may be necessary a few years later.

With labor at 50 cents per hour and the resulting gray birch wood of little or no value, it cost $3 to $6 per acre to free the white pine. Two such weedings will cost approximately $10 an acre. On well-stocked stands of young white pine this cost is reasonable and compares favorably with planting costs of about $15 per acre.

The comparison is made more favorable because in releasing pine the investment is made ten or twelve years nearer harvest time than is any similar investment in planting. Furthermore, carrying costs may often be somewhat relieved by the marketable value of the gray birch removed.

On an average site in New Hampshire it is possible to grow eighteen cords of gray birch in twenty years. On a similar site it is possible in fifty years to secure 30,000 board feet or more of white pine. Unless the pine is released the land will be taken over by the birch.

In order to get a large number of New Hampshire woodland owners to handle their white pine lands in this way, Extension Forester K. E. Barraclough is carrying on demonstration meetings in various parts of the State.

American Forests and Forest Life, October 1928.

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PENNSYLVANIA PINE PLANTATION SOLD AT A PROFIT

In a recent sale of farm property near Tarentum, Allegheny County, Pa., $800 was paid for a plantation of northern white pine established seven years ago on about 6 acres of land unsuitable for agricultural crops. The seller, Fred Mathia, according to report to the Forest Service, United States Department of Agriculture, established the plantation in 1921 with 5,000 2-year-old and 2,000 3-year-old seedlings from the State nurseries. Ninety per cent of the trees have survived, and some of them have reached a height of 9 feet. It cost Mr. Mathia not more than $75 to make the plantation. Thus his gross profit, seven years after the planting, is 725.

QUARANTINES

THE CONNECTICUT
AGRICULTURAL EXPERIMENT STATION
New Haven, Connecticut

QUARANTINE ORDER NO. 17

In view of the fact that the white pine crop of the State is of great economic importance and because the present and future supply of this wood is menaced by the white pine blister rust, measures are being taken by the Connecticut Agricultural Experiment Station to control this disease. As one means of control, measures will be taken to prevent infection of white pine stock grown in commercial nurseries.

It has been demonstrated that the white-pine blister rust spreads from pine to pine only through intermediate stages on currant and gooseberry leaves.

Now, therefore, I, Director of the Connecticut Agricultural Experiment Station, pursuant to the provisions of Chapter 31 of the Public Acts of 1927, after a public hearing of which due notice was given affected parties, do hereby proclaim quarantine areas surrounding the hereinafter named nurseries. Such quarantine areas shall each consist of two zones; a zone extending approximately one mile from the nursery bounds within which no cultivated black currants (Ribes nigrum may be grown or possessed and within which all present bushes of this species shall be destroyed or removed; a zone extending fifteen hundred feet from the bounds of the nursery, within which no cultivated currants or gooseberries of any species may be grown or possessed and within which all plants of the genus Ribes shall be destroyed or removed, an agreement having been made with the nurseries in question to compensate the owners of the above mentioned cultivated Ribes or to substitute plants of other species for those destroyed.

The exact boundaries of the zones shall be described and mapped and copies of same filed with the State Entomologist. Such quarantine areas surround the following nurseries:

A. N. Pierson, Inc.,	Crowell, Conn.
Conine Nursery Co.,	Stratford, Conn.
Elm City Nursery,	Woodmont, Conn
H. J. Zack Company,	Deep River, Conn.
Jas. J. Kelley,	New Canaan, Conn.
North-Eastern Forestry Co.,	Cheshire, Conn.
Outpost Nurseries,	Southport, Conn
The Barnes Bros. Nursery Co.	Yalesville, Conn.
Verkade's Nursery,	Waterford, Conn.
Sierman's Nursery	W. Hartford, Conn.

This quarantine order becomes effective October 1, 1928.

John H. Trumbull.
Governor.

W. L. Slate, Director
Conn. Agri. Exper. Station.

NEW QUARANTINE RESTRICTS SHIPMENT OF NEW YORK HARD PINES

A quarantine prohibiting the interstate movement of Scotch pine and certain other hard pines, from nine counties of northern New York State, on account of the Woodgate rust, was announced today by the Secretary of Agriculture. The regulations become effective November 1.

The regulated area from which the shipment of susceptible pines is prohibited, includes Clinton, Essex, Franklin, Hamilton, Herkimer, Jefferson, Lewis, Oneida and St. Lawrence Counties of New York State. Two heavily infected sections are known, one just southwest of the Adirondack Mountains and the other in the extreme northeastern corner of the State. The disease is less generally distributed in other parts of the regulated area.

All hard pines appear to show a certain amount of susceptibility to Woodgate rust infection, but several important species (including red and pitch pines) have not yet been proved able to support the fungus long enough to harbor and disseminate the disease, and are therefore omitted from the list of restricted species at this time.

None of the pines now prohibited movement, namely, Scotch, Canary Island, Slash, Japanese red, Corsican, Stone, Western Yellow, Monterey, Loblolly and Jersey pines, are native of this region but several of them have been widely introduced.

Scotch pine, the species attacked with particular virulence, is a tree of great value to the Northeastern States where it has proved successful when planted in blowing sand. The danger from Woodgate rust, however, lies less in the menace to that species than in the danger of its spreading to other regions and proving highly injurious to the extensive hard pine stands of the Southern and Western States.

The disease causes galls or swellings on the trunks and limbs of the trees attacked. The parts of the tree above the galls then die, or "brooms" are produced which destroy the value of the pine for lumber. This rust is especially difficult to control as it spreads direct from tree to tree without the intervention of an alternate host.

October 23, 1928.

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"OLD MAN WINTER" ARRIVES IN NEW HAMPSHIRE

The advance agents of "OLD MAN WINTER" have already made their presence felt in New Hampshire. In the southern sections snow flurries have been seen for two or three weeks; in the northern section as much as five or six inches of snow has already fallen.

Tom Kane, cooperating with the Grafton County Farm Bureau and the extension Service, sponsored a forestry field meeting during the week of September 17th at Sugar Hill (Franconia) N. H. Mr. J. H. Foster, State Forester, and Asst. State Forester, W. F. Hale, in attempting to get to the meeting encountered from 4 to 6 inches of snow at the southern entrance of Franconia Notch and turned back, not daring to chance going any further. Let's hope the cold wintry blasts and the white rain postpone their annual visit to us.

Nov. 14, 1928. T. J. King, N. H.

PROGRAM

ANNUAL BLISTER RUST CONTROL CONFERENCE

PROVIDENCE, RHODE ISLAND - NOVEMBER 19 and 20, 1928.

November 19th - 9:30 A.M.

Room 313, State House, Providence.

Opening Address.....Mr. H. A. Lewis,
Commissioner of Agriculture.

I. Discussion of Control Problems

Talks will be given on several topics of special interest to the blister rust agents; such as, systematic control work, Ribes ecology, use of chemicals as Ribicides, eradication of Ribes nigrum, procedure in securing cooperation, infection conditions, educational material, quarantine inspection, nursery sanitation, and eastern and western control programs.

November 20th - 9:00 A.M.

Meet at Room 129, State House, Providence - travel by automobile to Goddard Memorial Park, East Greenwich, R. I. Conference 10:00 A.M. at Mansion House, Goddard Memorial Park.

II. Discussion of Related Problems

Epidemiology of blister rust - new forest tree diseases - woodlot management.

(Luncheon at East Greenwich Inn)

III. Inspection of Goddard Forest

Contains over 500 acres of forest plantations made during past 50 years - excellent example of reforestation on sandy and gravely sites - large variety of forest trees - sample plots - forest tree diseases, including European larch canker.

Space Will Be Provided For Exhibit Material

OFFICIAL ORDERS

P. B. A. Circular No. 107 September 28, 1928.

Supplementing P.B.A. Circular No. 27 "Registration of Official Mail."

The Postmaster General has drawn the attention of the Department to the following provision in the Act of May 1, 1928.

> Any official domestic letter or parcel to be registered by any executive department or bureau thereof, or independent Government institution located at Washington, District of Columbia, or by the Public Printer, which requires registration may be registered without the payment of any registry fee.

The communication comments on this new provision in the following language:

> The object of this legislation is not to curtail the privilege of free registration of official mail which requires registration but it does place upon those in charge of the executive departments and other Government institutions at Washington, D.C., the responsibility of determining just what official mail is of such a character as brings it within the category of such matter as requires registration. The matter is called to your attention in order that instructions may be promulgated under which some responsible official of your Department will determine what requires registration and appropriately instruct those concerned, instead of leaving the question open to indefinite responsibility.

The material arising in this Department which requires registration falls within the three following classes:

1. Communications where record of receipt is essential or desirable. Example: Notices of date to begin work on contracts; notices of renewal of leases.

2. Material which in the hands of unauthorized persons might be used prejudically to the Government or the public. Examples: Transportation requests: Civil Service examination papers. This should not be extended to remote possibility of misuse, as disbursing officer's checks.

3. Material of considerable value or material of some value the replacement of which, if lost, would be impossible, difficult or laborious. Examples: only existing copies of manuscripts: only existing copies of manuscript charts or tabulations. But replacement material of less than considerable value should not ordinarily be registered.

4. There should be designation in each bureau of some administrative officer for reference of questions as to registry of material not clearly falling within the above classifications. Where such bureau officer is in doubt, the Chief Clerk of the Department should be consulted.

W. A. Jump,
Acting Director.

EXPERIMENTS ON THE ERADICATION OF CANADA THISTLE WITH CHLORATES AND OTHER HERBICIDES

Summary

The purpose of the experiments here reported was to develop a method for the eradication of Canada thistle, Cirsium arvense (L.) Scop., from arable land by the use of herbicides. The additional effects of the herbicides upon the soil were also determined.

Sodium chlorate, $NaClO_3$; potassium chlorate, $KClO_3$; sodium thiocyanate, NaCNS; sodium cyanide, NaCN; and sodium arsenite, $NaHAsO_3$ were the herbicides used.

An application of 200 kgm. per hectare of sodium chlorate (or 250 kgm. potassium chlorate) per hectare as dry salt on the ground late in the autumn killed the roots of Canada thistle during the winter. An application early in the spring was less effective. Other herbicides used had practically no effect on the Canada thistle under field conditions.

The effectiveness of chlorates is due to their rapid penetration through soil and their slow decomposition, especially at low temperatures. Sodium thiocyanate, and to a greater extent sodium cynanide, decomposed so rapidly in the soil that no harm was done to Canada thistle under field conditions. Sodium cyanide did not seem to penetrate the soil under field conditions. Sodium arsenite was ineffective against Canada thistle because it penetrated the soil very slowly A special apparatus was constructed for determining the rate at which the herbicides penetrated the soil.

An application of herbicides in the autumn had no influence on the ammonification and nitrification processes in the soil the following spring.

An application of 200 kgm. per hectare of sodium chlorate in late autumn killed the Canada thistles and did not injure the oats that were sown on the plots the following springs.

Alfred Ashlander in
Journal of Agricultural Research. June 1, 1928.

WORD FROM PALESTINE

A letter has just been received by Dr. Martin from Dr. Amihud Grasovsky. Dr. Grasovsky is Inspector of Agriculture and Forests for Acre and Galilee with headquarters at Caifa (Haifa). He writes as follows:

> "I am still dizzy from impressions. As soon as things settle I will write you a lengthy letter on our work and life which will sound exotic to you.
>
> "I have forwarded your notes on chemical eradication to our chemical department."

Dr. Grasovsky was in our office for part of two years and conducted studies in control reconnaissance in Oregon and California in 1925 and 1926, and later made ecological studies of Ribes, particularly the relation of light to Ribes growth and reproduction.

AMONG OURSELVES

Of the men engaged in Research work with Mr. Fivaz in New York the past summer, several are in school and some in business.

Mr. L. P. Gould, a student at Cornell University, was recently appointed Assistant Instructor in Chemistry at that institution. His address is 306 Highland Road, Ithaca.

Mr. Thurston L. Corbett, who has spent his summers for the past six years with Mr. Fivaz, recently passed the bar examination in New York State and is now practicing law at Rochester, New York. His address is, Care of the Central Y. M. C. A., Rochester.

Mr. John D. Griffiths has returned to the University of Cincinnati where he is a student in the College of Engineering. His address is 3330 Jefferson Avenue, Cincinnati.

Mr. T. H. Graham is a student at the University of Maryland, College Park, Maryland.

Mr. G. C. Cowdrey has returned to Eastwood Ohio. He will teach this year at Covington, Kentucky.

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Mr. Herman J. Ninman, State leader in Wisconsin, is now in the Washington Office writing up the reports on the Eau Galle demonstration area.

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Mr. E. C. Filler in charge of the Eastern Field Office at Boston, Massachusetts, had a good write up under "Who's Who" of the news letter of the New York State College of Forestry of Syracuse University from which he was graduated with the class of 1916. Of interest to the blister rust agents is the fact that Mr. Filler started as a member of the first Ribes eradication crew in 1916 and has progressed successfully through various positions until he holds his present one.

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Mr. W. J. (Bill) Endersbee also had a write up in the same article with Mr. Filler.

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The Blister Rust Bowling team at Washington pulled itself out of the cellar last night by taking two of three from the Central Stores quint. Our team comprised Messrs. H. P. Avery, R. A. Sheals, G. B. Posey, A. E. Fivaz, and J. (Jack) M. Palmer. As anchor man "Jack" rose to the opportunity with a 361 set while Avery was next high man with a 310 set.

Nov. 2, 1928.

WASHINGTON OFFICE NOTES

Dr. J.F. Martin made a trip in the latter part of October to Lafayette National Park on Mt. Desert Island, Maine. He was accompanied by Messrs. Frost and Filler. Arrangements were made for a preliminary survey of blister rust conditions in the park as a basis for formulating plans for the control of the disease. The National Park Service is interested in saving the white pine in Lafayette Park and requested the cooperation of this office.

Mrs. Alma B. Fivaz returned to work October 16, after a summer's rest at Warrensburg, New York.

Mrs. Agnes T. Shields was appointed as Assistant Clerk on October 18th, being transferred from the Assignment Division of the Patent Office.

Mrs. Helen T. Wright received an appointment as Clerk-Stenographer on November 1st, being transferred from the Estate Tax Division of the Treasury Department.

Mr. Ed. G. Schmidt received an appointment as Assistant Clerk on October 2d, being transferred from the Bureau of Immigration in the Labor Department.

Mr. H. P. Avery, Head Clerk, visited his former home in Arkansas from October 6 to October 16.

Mr. Harry Pennington, Messenger in this office, was promoted November 2nd to Under Clerk in the office of Plant Disease Survey.

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Messrs. C E. Baker, Arthur J. Lambert, and E. J. McNerney, who were temporarily engaged in quarantine inspection work under the Plant Quarantine and Control Administration, have returned to their respective headquarters in New York, Maine, and Massachusetts.

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Mr. Percy B. Bell, Jr. Chemist, Spokane, resigned October 8th.

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Miss Selma K. Millick Under Clerk Typist, Spokane Office, resigned October 20th, her place being taken by Miss Catherine Ryan.

PUBLICATIONS

Blister Rust

Allen, R. H. White Pine Blister Rust in the report of the Division of Plant Pest Control. Annual Report of the Commissioner of Agriculture for Massachusetts for the Year Ending November 30, 1927, Pages 18, 20 and 21.

Kelley, A. P. White Pine Blister Rust Survey in Pennsylvania. Forest Leaves, October 1928, Vol. 21, No. 11.

Root, G. A. Federal and State Agencies Join Forces to Keep California Free from Pine Blister Rust, American Trust Review of the Pacific (San Francisco) Vol. XVII, No. 10, October 15, 1928. It is interesting to note that the American Trust Company of San Francisco has seen fit to give three pages of its publication to the fight against the blister rust. The reason for it may possibly be found in the following statements:

"The merchantable western white and sugar pines have an aggregate standing timber value of approximately $322,500,000. In California alone the sugar pine stands are valued at more than $120,000,000. In addition, the young stands of the pine species have great potential values in future forests."

Western White Pine

Warren, Nancy Rovena - White Pine - "My Lady of the North". American Forests and Forest Life, September 1928, Vol. 34, No. 417.

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White Pine

Fisher, Richard T. Pine Plantations and New England Forestry. Journal of Forestry, Vol. XXVI, No. 6, Pages 790 to 793. Oct. 1928.

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BLISTER RUST NEWS

December 1928.

Volume XII

Number 12

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

CONTENTS VOL. 12. NO. 12

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E D I T O R I A L S T A F F

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States

VOL. 12, No. 12 - - - - - - - - - - - - - - - December, 1928

MERRY CHRISTMAS!

Ye savory plum pudding of ye olden time is symbolic of good cheer.

And by this symbol, ye Office at Washington expresses its message of good cheer to all ye Blister Rust workers and cooperators.

COMMENTS ON THE DISCUSSION ON RIBES SEEDS

Al Fivaz' note in the November Blister Rust News makes it necessary for me to add one point which I should have made in my previous observations on Ribes seeds. That is, the figures on "number of seeds" included, as in Fivaz' studies, only seeds which had the appearance of being sound. Those which appeared to be nothing but empty husks or otherwise undeveloped, were discarded.

I notice that Al's figures for average number of seeds per berry were much higher than mine: For Ribes rotundifolium 10, as compared with 7, and for R. cynosbati 19 as compared with 8. This difference may be attributed to the possibility that he was primarily collecting individual berries, most of which were probably fairly normal specimens, whereas our project was more on a "wholesale plan", often involving the stripping of entire bushes, and taking all sorts and conditions of fruit. Thus his data for R. rotundifolium are based on 531 berries and for R. cynosbati on 158 berries; while we had respectively 4,237 and 2,145 berries for the two species.

The figures given for maximum number of seed per berry are certainly illuminating, as are the percentage figures, showing that a considerable proportion of these berries may contain upward of 30 seeds. This seems to indicate a larger capacity in this respect than perhaps many of us had realized.

E. W. Littlefield, New York.

Note:- Regarding the procedure of collecting fruit of G. rotundifolia[1] (Michx.) Cov. and Britt., used for seed extraction work as described in the News Letter 12: 262-263, referred to by Ed Littlefield. Collection was made from large bushes near Paradox, N. Y. The berries were not selected; practically all the berries were stripped from each bush. The bushes having the most fruit were the ones selected for picking. The fact that some of the berries picked had no seeds indicates that the fruit was not selected. As to the fruit of G. cynosbati[2] (L.)Mill., these were collected by Mr. G. B. Posey near Warrensburg, N. Y., who informs me that he picked all the berries he could find on the few fruit-bearing bushes he located.

A. E. Fivaz.

1 G. rotundifolia - syn. R. rotundifolium.
2 G. cynosbati - syn. R. cynosbati.

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BLISTER RUST SCHOOL PLAN PREPARED FOR STATE OF NEW YORK.

At the request of Mr. McIntyre, State leader in New York, a tentative lesson plan for grade schools has been prepared for use in the State of New York. This lesson plan is based on the use of Miscellaneous Publications No. 22 and No. 27 as references. Questions and answers based upon the above references have been prepared, thus making it easy for the teacher to get the important facts concerning the work before the pupils.

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IMPRESSIONS OF THE 14th ANNUAL BLISTER RUST CONTROL CONFERENCE HELD AT PROVIDENCE, R. I. - NOVEMBER 19 AND 20, 1928

To my mind the 1928 blister rust conference was the most interesting as well as the most instructive that I have had the good fortune to attend, and the field trip to Goddard Park near East Greenwich was the feature.

From the history of the land comprised in Goddard Park, through the various plantings to the present, as told by Mr. Matthewson, the Superintendent, to the end of the hike, the day was one which I consider well spent. To us who have not been privileged to see plantations older than twenty years and most of them under fifteen years, the age and extensiveness of the planted areas was impressive. Probably the fact that the land was largely drifting sand makes it doubly interesting.

Norway Spruce, 65 to 70 feet in height, Scotch Pine, 26 to 28 inches in diameter and straight-trunked white pine 60 feet in height and red pine as thrifty as any growing anywhere were to my mind outstanding. Perhaps the red pine looked unusually well in comparison with the white pine on account of the extensive weevil damage to the latter.

The fact that the owners had the vision, the initiative, and the stick-to-it-iveness to raise and transplant trees on those dunes of drifting sand is a lesson in itself. Certainly the results obtained are remarkable even though the best white pine stand has but 23,800 board feet per acre after fifty years.

The European Larch canker on the Douglas Fir was seen by the majority of s for the first time which gave added interest and instruction to the day.

We could not think of the 1928 conference without remembering Mr. A. B. Graham and his most interesting talk, both instructive and entertaining, a rare combination.

May we have more field trips and either less papers or more time in which to hear them. One feature of any field trip is the opportunity it affords for the participants to become acquainted with each other.

S. H. Boomer, New Hampshire.

Edit:- In connection with the yield figure of 23,800 feet of timber in 50 years, this agrees very well with the lumber yield per acre on Quality 3 land for even-aged, second-growth white pine stands as given by E. H. Frothingham, Dept. of Agriculture Bulletin #13. Frothingham's figure for yield at 50 years is 24,100 board feet.

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CORRECTION

Through an error on the part of the editor the article entitled, "Federal and State Agencies Join Forces to Keep California Free from Blister Rust", published in the American Trust Review of the Pacific for October 15, 1928, was ascribed in the Nov. Blister Rust News to Mr. George A. Root as editor. Mr. Root informs me that this article should be credited to Mr. Gilbert H. Parker, editor of the American Trust Review of the Pacific.

RHODE ISLAND FORBIDS ILLEGAL TRANSPORTATION OF WHITE PINE FOR CHRISTMAS TREE PURPOSES

It is illegal to transport five-leafed pine in Rhode Island. Land owners are protected by law against Christmas tree vandals. State Police are cooperating with the Department of Agriculture in preventing spread of blister rust.

As the Christmas season is approaching, many people have formed the habit of going out into the country and cutting or uprooting evergreen trees without the consent of the owner. It should be appreciated that a dangerous and injurious disease known as white pine blister rust is present in Rhode Island. The suppression and control of this disease is being carried on within the state by preventing the movement of five-leafed pine about the state, except by permit, which permit is issued by the State Department of Agriculture after an inspection of the trees to be moved to see that they are free from disease.

Control of this disease is also being effected by eradicating wild and cultivated currants and gooseberries which are the alternate host plants of the disease. Persons wishing to cut and move for Christmas tree purposes, white pine in Rhode Island, should communicate with the State Department of Agriculture immediately before cutting and attempting to move such trees.

The state is spending in cooperation with the Federal Government, a substantial sum of money each year in effectively controlling this forest menace. Persons violating the statutory provisions may be fined not exceeding $100.00. The Department of State Police is cooperating with the Department of Agriculture in preventing the illegal movement of pine, especially during the Christmas season when the law is apt to be unknowingly violated.

During the last session of the General Assembly, Chapter 397 of the General Laws, entitled "Of Offenses against Private Property" was amended to give land owners real protection against vandals, who each year, cause serious damage and loss to the farmers of Rhode Island, and who wilfully and without the consent of the owner, uproot or cut down Christmas trees.----R. I. Press Note

SIDE LIGHTS ON THE CONFERENCE

Friend Hurford, genial State Leader for Rhode Island and host at the conference says. "Don't blame me for the success of our conference, 'twas Filler who was mainly responsible. The State Department of Agriculture appreciated his efforts."

"The papers on Ribes ecology touched on a subject of much importance. I hope we agents can go on a field trip sometime to see as well as hear what happens to Ribes under changing conditions.

"Doctor Snell won a dictation race from our pet "stenog". She just could not take them. We take our hats off to a man who can give so much "meat" in so little time. Dr. Snell's statement that white pine under five year old is most liable to one hundred per cent infection is interesting. It looks as though from an educational and control viewpoint, that reforestation and blister rust control go hand in hand."

Blister Rust Control Workers and Cooperators on the Steps of the State House, Providence, Rhode Island, attending the 14th Annual Blister Rust Conference, November 19 and 20, 1928.

Photo by Providence Journal.

A STUDY OF WHITE PINE PROFITABLE TO BLISTER RUST AGENTS

The last Blister Rust Conference at Providence, R. I., was without doubt one of the best ever held and is bound to prove to be of material benefit to blister rust workers. Not only were the papers and talks given on blister rust excellent but also those on general forestry, which should help in solving future blister rust problems. To single out any one topic for discussion is almost impossible as they were all good. Of special interest was the talk given by Mr. Foster, State Forester of New Hampshire, on the management of white pine; and the yield given for various sites. This data should help in interesting pine owners in protecting pine from blister rust. One thousand board feet per acre per year on the best sites is surely worth fighting for.

Agent Baker's paper, relating his experience in the eradication of Ribes nigrum in New York, was another subject of interest to Vermont agents since we are planning on conducting a black currant eradication campaign this winter similar to that carried on in New York. While conditions are different in that the number of Ribes nigrum per town are few in Vermont and the towns to be worked have considerable native pine, yet little opposition is expected. However, in view of Baker's painful experience and lest his suffering be in vain it might be advisable to learn about Ribes nigrum from him.

The papers on Ribes ecology, on the experiments in the east and west with chemical eradication, and Dr. Pennington's data on weather conditions in relation to possible infection taking place in 1927 and 1928, all give us something to look for in the future; and last but not least Professor Graham's very interesting talk on psychology should help us in interesting others in our control program.

F. H. Rose, Vermont.

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NOTES ON THE CONFERENCE FROM MICHIGAN

I believe the conference means a little more to me than to the eastern blister rust workers. It gives me an opportunity to "rub shoulders" with the men who have made blister rust control a success; men who are ever willing to give advice and aid as has been so well demonstrated.

The conference program was most interesting and educational in its combination of indoor and outdoor meetings. I was extremely interested in Mr. Baker's paper on cultivated Ribes eradication and the comments and discussion it brought forth. This whole question of the eradication of cultivated Ribes is a vital one to Michigan.

D. J. Stouffer, Michigan.

CHARTS OF DETWILER'S MISCELLANEOUS PUBLICATION NO. 27, IN DEMAND.

Mr. McIntyre, State leader in New York, has just called for 14 sets of enlargements of the drawings used in Mr. Detwiler's bulletin entitled "Black Currant Spreads White-Pine Blister Rust". These drawings show the spread of the blister rust and the part played by the cultivated black currant as well as the wild currants and gooseberries in the distribution of the rust, also the method of controlling the disease. Mr. R. L. MacLeod of the Western Office has sent in his order for 6 of these charts.

A new supply to cover both orders as well as to leave a balance for distribution to other agents in the East has been sent for.

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THE YOUNGER GENERATION ARE BECOMING INTERESTED IN FORESTRY

"Let's have boys and trees grow up together."

That is the commendable spirit with which the State of Wisconsin is forwarding the Junior Forest Rangers, an organization for boys between the ages of fourteen and twenty-one, planned to foster regard for the beauty and material worth of forests in the impressionable mind of youth. And supplementing the junior rangers, among younger children and girls as well as boys, are Wisconsin's new School Forests - tracts of forty acres or more given to the schools for preservation and development.

Behind these juvenile movements for forest preservation in Wisconsin stands the new forest crop law, which applies alike to the youth and age of both trees and men. "Fair taxes mean forests saved" might very well be the new law's slogan, for that is its result. *****

There are now 800 Junior Forest Rangers scattered through sixteen counties of the State, and ten School Forests dedicated. ******

(Extract from "The Country Gentleman" for Sept. 1928.)

Note: It seems to the Editor that the Junior Forest Rangers are a medium through which more educational work in blister rust control could be conducted. These boys, being from 14 to 21 years of age, are more mature than the Boy Scouts; and we know that quite a little interest in protecting the white pine has been manifested in the Northeastern States by this younger outdoor organization.

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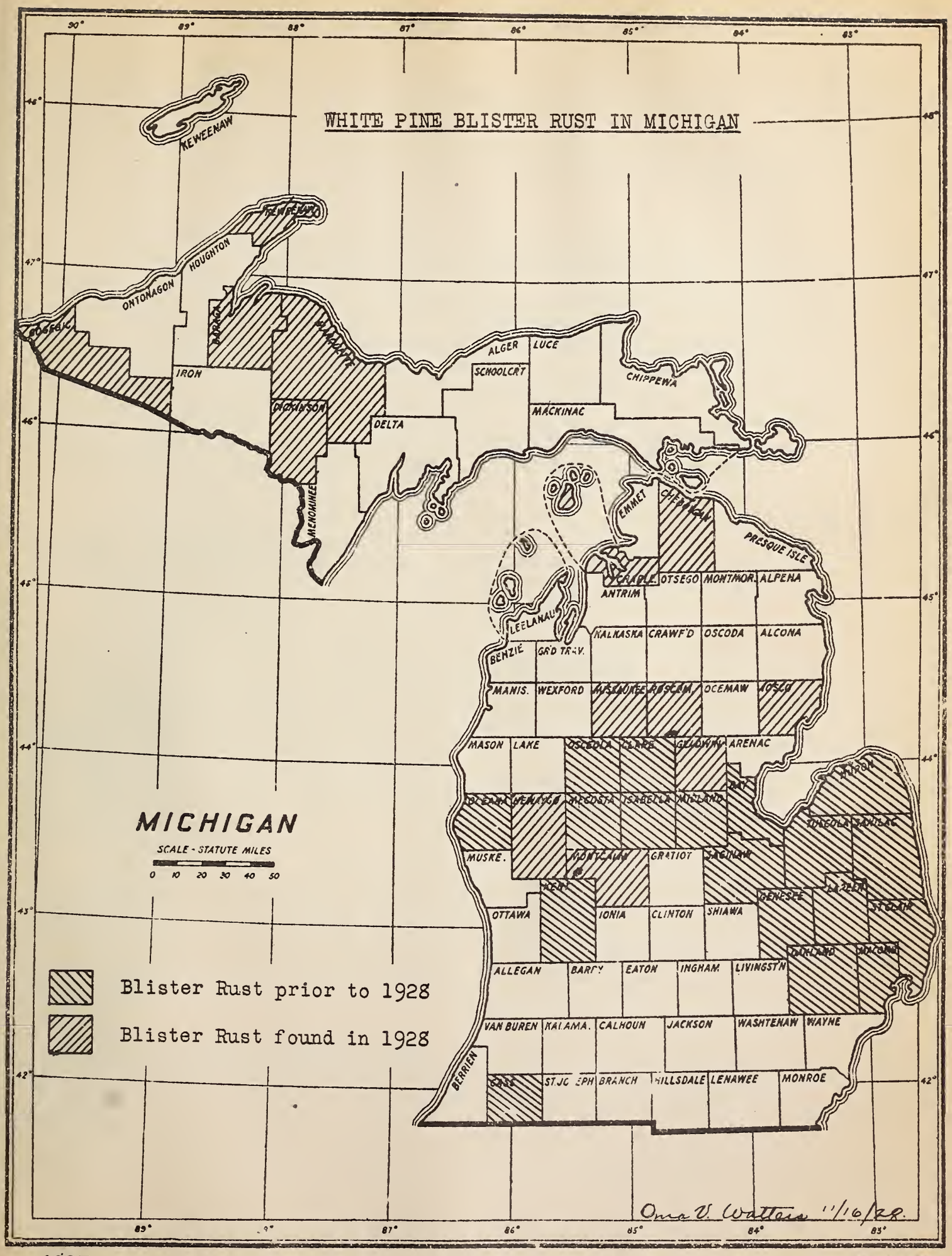
PRIVATE COOPERATION AT BAR HARBOR, MAINE

It is interesting to note that among the private cooperators of Ribes eradication in Maine are found the names of John D. Rockefeller, Jr., and Mr. Edsel Ford. It would seem that with the names of such astute business men as these heading the list it would not be difficult for others to follow suit.



1927

GOVERNMENT PRINTING OFFICE

BLISTER RUST SITUATION IN THE INLAND EMPIRE

Blister rust is abundantly present throughout the white pine belt of the Inland Empire,(Comprising northwestern Montana, northern Idaho, and northeastern Washington). So far it has not been found on pines in Idaho, but judging from the fact that concentrations of infection on Ribes were found on the East Fork of St. Maries River, and on Elk Creek, it is believed that undiscovered pine infections exist in these two vicinities.

In 1928 there were 32 Ribes infection points found. At three of these points the nearest pines were 400 feet from infected bushes; at two points pines were 200 feet distant; and at each of the remaining twenty-seven points pines were within 100 feet and often within 10 feet of the infected bushes. This condition cannot help but result in the production of aeciospores throughout the Inland Empire in three or four years. It is beyond dispute, owing to the large masses of susceptible Ribes species growing in close association with pines, particularly in the southern and optimum range of western white pines, that the rust will rapidly intensify itself in the near future, and constitute a serious and ever increasing menace to the western white pine.

H. N. Putnam.

(Extract from Western Blister Rust News Letter for Nov. 15, 1928.)

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COMMENTS FROM MASSACHUSETTS

Conference means formal discourse. The Blister Rust Conference recently held at Providence, Rhode Island, was surely no formal discourse, as everyone present had opportunities to bat and home runs were frequent. No one feature or talk stood out conspicuously. but all the topics discussed were of vital interest and full of meat. A great deal of benefit was derived by all who attended.

The field trip to Goddard Memorial Park, East Greenwich, Rhode Island, was especially interesting. To see the numerous plantations and to note the growth of the various species on both good and poor sites was indeed a remarkable revelation in itself. Having the different plantations so well described by the caretaker gave one an opportunity to make comparisons and draw his own conclusions.

It is always a privilege and a pleasure to be present at these Blister Rust Conferences and everyone privileged to attend must surely feel grateful to the department heads in making these gatherings of blister rust workers possible.

R. E. Wheeler, Massachusetts.

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DELAY IN FOREST RECLAMATION A CRIME AGAINST POSTERITY, SAYS CHIEF FORESTER.

The United States can not afford to let things drift in working out the most economical and advantageous use of its forest areas, Chief Forester R. Y. Stuart of the United States Department of Agriculture declared.

With three-fourths of the forest land, and six-sevenths of the population, the eastern half of the United States contains less than two-fifths of the country's standing saw timber, the Chief Forester pointed out. The problem of putting the land to productive and beneficial use is particularly acute in this section. Less than one-sixth of its forests are virgin, and it is now drawing upon the virgin stands of the West for more than 20 per cent of its annual consumption of lumber. Its cut-over forests vary in present condition from second-growth ripe for the saw to land wholly denuded of valuable timber. Of the total eastern forest area more than 95 per cent is privately owned.

The United States can not afford to wait passively for economic forces to work out the problem in their slow way, says Major Stuart.

"In time," he continued, "those forces alone would largely accomplish what needs to be done. Gradually private landowners will come to grow timber crops on a larger and larger part of the 336,000,000 acres of eastern forest land which they now own. Gradually they will abandon a larger and larger part of the land which they can not make pay enough to meet its tax bills.

"Gradually forced public ownership of these abandoned and wrecked lands, brought about through a process of automatic land classification, will lead to policies of public administration and reclamatory expenditures. The public and private burdens imposed by shortages of necessary forest products and in the form of impoverished localities, stripped mountains, man-made deserts, and violent changes in the character of stream flow, will sternly bring home the necessity for finding remedies. But the cost of waiting for all this and the easily preventable deterioration in the ability of the forest to respond to right practices make the suggestion of such a course monstrous.

"Two major purposes need to be pursued," Major Stuart said, in pointing out a desirable remedial program. "One of them is to hasten the economic process by which, in time, probably the major fraction of the present private forest land in the eastern half of the country--and for that matter in the West, too--will come to be used for timber growing by its owners, as a paying private enterprise. The other is to adopt public policies of forest-land acquisition and administration on a scale that will bring the East, without too long delay, into a situation more nearly comparable with that of the West and of every great nation of the civilized world having extensive forest resources."

Private forestry at best will never accomplish more than a partial solution of the forestry problem. Public forestry must attack the core from the

other side through State, Federal, and municipal forest acquisition, aimed primarily at obtaining the land most necessary from the standpoint of watershed protection, recreation, and like public needs, land which, under management, will tend most effectively to stimulate private interest in timber growing, and land necessitating such outlays for its reclamation to good timber-growing conditions that not for a long time, if ever, will private capital make use of it.

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MAPPING BY AEROPLANE

The present trend of development points to the early completion of an aerial photograph of the more inaccessible forest regions of the United States.

From the standpoint of actual value, the aerial photograph of a forest region gives the most perfect visualization of that area that can be made by any means now known.

The age class and timber type lines are generally so easily followed that the painful ground mapping now in vogue appears in a rather unfavorable light. In the present ground mapping, most of the actual age class and type lines must be "guessed in", instead of the very definite lines that one sees on the aerial photograph. These definite lines cannot be incorrectly located.

By going one step further, and using the stereoscopic camera for taking the aerial photographs, the relief of the land can be made to stand out to a degree that is impossible with the ordinary camera.

This aerial photo has been tried out in many lines of extensive forest mapping, and in some lines of more intensive work.

The writer had the pleasure of examining the aerial photos of some areas with which he felt familiar, and was surprised to see the many more details that could be gained regarding the area than from a very careful ground examination. The Rocky Mountain Forest Experiment Station has been completely mapped aerially, and some very fascinating hours can be enjoyed studying this area with which many of us are acquainted. The writer learned more about the details of the Experiment Station area in a few hours from the map than he could learn from many days of field examination of the same area.

Mr. Howard Flint, the Forest Service aerial observer and photographer, has us all backed off the map when it comes to knowledge of north Idaho.

It would appear that this new method of mapping might be adaptable to the needs of preeradication. At least it appears to offer sufficient possibility of decreasing the cost of preeradication that a sample area might be tried.

W. A. Rockie.

(Extract from Western Blister Rust News Letter for Nov. 15, 1928.)

PINE PLANTATIONS AND NEW ENGLAND FORESTRY*

By Richard T. Fisher Director, Harvard Forest.

(Continued from November Issue)

The financial outcome of forestry is plainly the final test of its practice and progress as an industry. In this connection also the plantation complex has been a misleading influence. It has fixed the idea that forestry means a long deferred return, a wait of fifty years or more to get back both the investment and the possible profit. This conception naturally involves the figuring of compound interest on original costs and carrying charges. Thus, forestry presents itself financially not in its true form as a continuous business in which current expenses are met by periodic returns, but as something between a speculation and a savings bank account with a tendency toward the former that is only partly neutralized by the worthiness of the cause. It is true that self-supporting or continuously profitable forests cannot be created over night, but there are many where this condition could be approached in varying degrees; and to have the nature and financial constitution of such enterprises continually obscured by the bugaboo of compound interest has been a real obstacle to progress.

All these objections, serious though they are, do not mean that the planting of pure stands of conifers, even of white pine, should be wholly discouraged. On the contrary, there is much true reforestation that should and must be done by planting, some of it even with white pine. The real objection is that from the standpoint of increased production and the promotion of practice, there are so many better ways of spending money and propaganda. There exists today reliable knowledge of New England forest conditions, of proven method in silviculture, of the marketability of products, which, if rightly interpreted, means a fundamental revision in the aims of forestry.

As alternatives to the pine planting policy - perhaps they should be called complements - three principal aims stand out. Taken together they make a concept of forestry which fits the present silvical and economic facts. In practice these involve policies which are interwoven and dependent.

First, mixed stands, either mixed hardwood or mixed softwood and hardwood.

Mixed stands, especially mixtures of hardwood or hardwood with softwood, tend to form and maintain fertile soil. In such stands, owing to rapidity of growth and natural pruning, the best quality of timber is produced, especially with softwood species. General forest sanitation is most effective, and insects and diseases are less likely to become epidemic. The original, pre-settlement forests were largely mixed hardwood with a varying element of softwood, and there is good reason to believe that only mixtures approach permanence of composition and health. Mixed stands are soundest from a business point of view: First, because they can most cheaply be established from growing stock now present on wild and cut-over land, either with the natural reproduction alone through weeding, or with natural reproduction and supplementary planting combined with weeding; and second, because the quality and variety of product make a safer investment. As regards the better species of hardwood, prices are

* Extract from "Journal of Forestry", October 1928, Vol. XXVI, Number 6.

already much higher than for low grade pine, and the indications are that for the next generation hardwood will be more valuable than softwood, being subject to less competition and more demand. In short, mixed stands are natural to the region, and they exist already - at least potentially - in a large percentage of young growth.

(To be continued in next issue)

CAN THE WEATHER BUREAU FURNISH DATA WHICH WILL BE OF VALUE IN BLISTER RUST CONTROL?

Dr. Pennington's talk and graphs pertaining to the correlation between weather conditions, especially relative humidity, and degree of infection on the pine leads one to speculate as to the possible use that this information can be put to in the future in the actual program of eradication.

Weather forecasts are of great value to the Forest Ranger and his force in tightening up the protective system during an exceedingly dry period. When the relative humidity falls below 15%, the danger is greatest that an incipient fire will spread beyond control. Thus a warning of an expected low relative humidity is the signal for using additional observers, and for the keenest vigilance of the entire force employed in protecting the forests.

Likewise, if a blister rust agent were notified of the advent of a period of extremely high relative humidity, he could possibly so shift his eradication work so as to immediately protect some of the most valuable stands of pine which would be likely to suffer the greatest new infection during this danger period. Of course if these areas were long time jobs, it would probably be extremely difficult to completely protect the pine on a short notice. Yet the side from which the prevailing wind would spread the most infection could be eradicated first, thereby eliminating the most dangerous factor of widespread infection first.

W. F. Pratt, New York.

Edit:- If any of the agents have made use of weather reports and predictions in their eradication work it would be interesting to hear about them. It is only by open discussion that we can benefit by others experiences.

It is well known that the Weather Bureau cooperates with the farmers in the fruit belts by giving frost warnings, but how practical the warnings of high relative humidity in our control work would be is a question.

"THE WELFARE OF THE NATION IS TO A LARGE EXTENT DEPENDENT ON THE PERPETUATION OF OUR FORESTS." - HERBERT HOOVER.

"A tree saved is a tree grown." That in a nutshell is the very essence of Mr. Hoover's attitude toward forestry today. True he believes in planting, he believes in the protection of our forests against disease and fire. All these things he knows have distinct places in our national forest economy. But as an engineer and as an implacable foe to waste of any kind, Mr. Hoover's chief interest has centered about eliminating avoidable waste, and saving the wood that in the course of a year must amount to many millions of trees.

C. L. Pack in "Forestry News Digest".

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WHITE PINE PLANTATIONS AT GODDARD PARK, WARWICK, R. I.

Most of the white pine at Goddard Memorial Park, growing in pure stands on fairly light soil, will never produce the type of lumber, if it were to be cut for such in the future, that the ancient white pine monarchs of our forefathers' time did. This is my personal opinion. That is, assuming that these plantations were cut at the end of sixty to eighty years, using the short rotation in an effort to make a profit over and above the investment, upkeep, and harvesting. In a pure stand of pine, soil fertility apparently decreases shortly after the more rapid height growth is put on. The soil lacks the balance and bacterial activity which a mixture of hardwoods and softwoods, or both, tends to create. The temporary type of pure pine grows crooked and knotty aided greatly by the ravages of the white pine weevil. And a stand of this type running twenty to thirty thousand board feet to the acre at fifty to sixty years of age will surely help to keep the price of box boards down.

With the price of box board stumpage leaning towards rock bottom, to just what kind of a use will we be able to put the lumber from our thousands of acres of pure pine plantations, so that they will not be merely a paying proposition from the standpoint of putting idle land to work, but also remunerative from the standpoint of production?

W. F. Pratt, New York.

SOME BLISTER RUST PHENOMENA!

Have seen pine with 42 inch growth in one season, many of them with three feet.

During the past season over 4,000 acres were covered with 25 cooperators.

With the exception of two or three towns this county has been eradicated.

Edit:- Paul Bunyan seems to be stalking through the forest again.

PLANT PEST CONTROL

The guarding of the Nation's crops, including its forest resources, from the entry of new insect and disease hazards, together with the waging of war on certain recently introduced pests, has been the work of the Federal Horticultural Board since the passage of the Federal Plant Quarantine Act, August 20, 1912. This first phase of the plant quarantine activities of the department ended last June with the reorganization, effective July 1, 1928, of all the work of the department of this nature under a new unit called the Plant Quarantine and Control Administration. *******. This reorganization is discussed in the final report of the Horticultural Board submitted to Secretary of Agriculture Jardine by C. L. Marlatt, Chairman of the Board, who continues as the Chief of the new Administration. ********.

To aid in the work of enforcement of quarantine restrictions Doctor Marlatt notes with approval a Congressional amendment to the Plant Quarantine Act which became effective May 1, 1928, and gives "authority, hitherto lacking, to stop and - without warrant - to inspect, search and examine persons, vehicles, receptacles, boats, ships or vessels, and to seize and destroy or otherwise dispose of plants and plant products or other articles found to be moving or to have moved by interstate commerce or to have been brought into the United States in violation of quarantine orders." The importance of this authority in the enforcement of restrictions on the entry of plants and plant products at our ports and in the enforcement of domestic plant quarantines will be readily understood. In relation to the latter, Doctor Marlatt adds, "it is a perfectly natural and frequent habit for motorists and others to pick up in the course of their trips, articles, the movement of which is prohibited or restricted on account of pests, and carry them long distances." He also mentions that the presence of roadside stands has caused considerable unintentional violation of regulations. *******.

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WHITE PINES TRANSPORTED BY AUTOS IN WISCONSIN

The work done by the staff of the Office of Insect and Plant Disease Control at Madison, Wisconsin, and the deputized game wardens of the State, shows that many attempts are made to transport small white pine trees from the northern part of Wisconsin to other states. The most successful violators are those carrying trees in automobiles. The white-pine blister rust may easily make its appearance in adjacent states unless the disease is controlled in Wisconsin wherever it appears. Other evergreen trees are carried in small lots by many automobiles, and if no authority were given to search them any serious disease could be distributed over large areas in a short time.

H. J. Ninman, Wisconsin.

SOME SUGGESTIONS FOR FUTURE CONFERENCES

Since probably most of your correspondents will commend Mr. A. B. Graham's contribution, I will not take time to offer a eulogy but simply add that it was unfortunate that more time was not available for discussion to be led by Mr. Graham.

State Forester Foster's ideas as to management of pine in pure stands and in mixed stands was very good. One needs to keep in mind that one should use the tools at hand and make the right use of his opportunities. If Professor Fisher insisted on trying to raise hardwoods on poor sandy land and if Professor Toumey were equally determined on pure pine stands on land which was so good that he had to maintain a constant fight with good hardwoods, the profession of forestry would be discredited doubly rather than boosted twofold by the activities of Yale and Harvard schools.

The feed at the Mansion House at Goddard State Park was quite preferable to a formal banquet where costs are high and the food scarce. If a banquet is decided upon for later years may it take the form of the Grange dinner.

This leads to another thought in regard to sociability and getting acquainted. If there could be a five minute intermission every hour or so, the men could get a smoke or a breath of fresh air if the smoke were too dense. The opportunity to move about a bit would bring the men face to face more times. This may take more time but as the time for discussions was so very brief, would it not be advisable to make the sessions three day affairs rather than try to crowd so much into two days?

The writer would suggest an innovation which might be given a trial; that is that the program be so arranged that some of the heavy material be taken up by the State leaders, members of the Washington and Boston Offices, and State collaborators and that in the meantime the agents be scheduled to hold a forum of their own with a committee appointed to codify such suggestions as might be desirable for presentation to the proper authorities. Such an unsupervised forum should bring to light many questions which, owing to natural modesty, do not obtrude themselves and yet which may be a constant source of lessened efficiency. This is not intended to imply that the agents want to see less of their superior officers. In fact the rubbing of elbows on a field trip or at a "feed" is especially heartening to the field men.

E. C. Clark, Connecticut.

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There is profit and pleasure in observing a growing young pine.

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Small or large orchards of fast-growing pines will be good collateral at the bank in a few years.

AMONG OURSELVES

Mr. H. Henry Knowles, formerly agent at Gloversville, New York, and who was in the Office of Blister Rust Control from June 8, 1923 to July 1, 1926, writes that his address is, Care of the Firestone Plantation Company, Liberia, Africa. Part of his letter as quoted in the News Letter of the New York State College of Forestry for October is here given:

> "You will be interested, no doubt, to know that I am now a junior planter for the Firestone Plantation Company in Liberia. This may seem a long way from forestry-as we consider it at home-and yet I am doing more forestry work here than at any time since leaving college. I am at least actually doing the work here-and not simply talking about it."

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Mr. O. C. Anderson, State leader in Rhode Island from July 5, 1922, to December 13, 1926, has returned this year to take graduate work at the New York State College of Forestry. A recent News Letter of his college states, "Anderson is looking his old self except that he has taken on several additional pounds and seems to radiate prosperity and good health". All of the Blister Rusters in New England and New York will be glad to hear that Andy has regained his health.

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Miss Phyllis Pennington, daughter of Dr. L. H. Pennington, faculty member of the New York State College of Forestry, and Clement (Mike) Percival were married July 14, 1928. Dr. Pennington will be on sabbatical leave during the following twelve months. He will be engaged in completing and preparing for publication the results of studies on the "Epidemiology of White-Pine Blister Rust" for the Office of Blister Rust Control, Bureau of Plant Industry, U. S. D. A.

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Mr. Raymond McKnew, Messenger in the Washington Office, was promoted to an Assistant Clerkship on December 1, 1928.

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A daughter, Christine, was born to Mr. and Mrs. William P. Blake, Jr. of Washington, D. C., on November 23, 1928. Congratulations.

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Mr. Gerneaux Hartley took Harry G. Pennington's place as Messenger in the Washington Office on December 5, 1928.

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PUBLICATIONS

Blister Rust

Anon.- White-Pine Blister Rust Quarantine Regulations Revised. The National Nurseryman, November 1928, page 330.

Buller, A. H. R. The Plants of Canada Past and Present. X. The White Pine Blister Rust Disease. Pages 46 to 49 in Appendix A from the Transactions of the Royal Society of Canada, Third Series, Volume XXII, 1928.

Hurford, A. W. Seedlings for Forest Planting. Four-page leaflet, Rhode Island Department of Agriculture, Bureau of Forestry, November 28, 1928. Several paragraphs are devoted to the planting of white pine and its protection from the blister rust and the white pine weevil.

White Pines

Hopkins, Howard. Seed Gathering in Minnesota's Pines. Men, Women and Children Comb the Innermost Haunts of America's Last Great Stand of Norway and White Pine for Seed. American Forests and Forest Life, December 1928, Vol. 34, No. 420, pp. 743 and 744.

NEW FORESTRY LEAFLET AVAILABLE

Every owner of a farm woodlot should have a copy of U. S. Forest Service Leaflet No. 29, "The Farm Woods--A Savings Bank Paying Interest", by W. R. Mattoon. This leaflet by Mr. Mattoon is one of the most easily read and best understood of the recent Forest Service publications. Agents, why not suggest to the pine owners you meet that they drop a postal card to the Office of Information, Department of Agriculture, for Leaflet No. 29? This will also tend to bring about the realization of one of Major Stuart's ideals.

R. G. P.

NEW FOREST PLANTING LEAFLET

State blister rust leader Hurford of Rhode Island, has just finished revising a forest planting leaflet. This leaflet entitled "Seedlings for Forest Planting", put out on November 28, 1928, has a very attractive form. The planting of soft woods is recommended, chief of which is the white pine. Other species include Red and Scotch pine, and Norway and White spruce. The advantages and disadvantages of planting each species, as well as comments on the growth, are given in column form. A paragraph is given for protection and care and in this paragraph are the following columns: Susceptible Trees, Enemy, and Control Measures Necessary.

All those who are interested in this new type of planting leaflet should write for it, to the Department of Agriculture, Providence.

R. G. P.